

THE PHONETICS AND PHONOLOGY OF
THE SURATTHANI DIALECT OF THAI

A thesis submitted to the University of London
for the Degree of Master of Philosophy

by

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ABSTRACT

This thesis presents an outline of the phonetics and phonology of the Suratthani dialect of Thai. Particular attention has been paid to the tonal system which is the principle way in which the dialect differs from Standard Thai.

An introduction gives information on the geographical background where the dialect is spoken and the linguistic background of the informant (the writer). The scope of the thesis is also included.

Chapter 2 deals with the consonant phonemes of this dialect and gives the phonetic realizations of each phoneme according to context. Palatograms are used to illustrate and support the phonetic descriptions.

The vowel phonemes and their realizations are given in Chapter 3. An attempt is made to describe the qualities of these vowels with reference to the Cardinal Vowel System of Daniel Jones.

Chapters 4 and 5 deal with the tonal system. Chapter 4 is concerned with the phonetic realizations of the tones as they occur in isolated monosyllabic words. Tonograms are used to illustrate the characteristic pitches of the tone. Professor Y.R. Chao's Tone-letter System is also adapted to illustrate the varying phonetic realizations of the tones or 'tonetic variants'. Chapter 5 is an extension of this study to longer utterances of two syllables, paying special attention to the tonal behaviour of compound nouns and noun phrases.

The correlation and restrictions of the tones with respect to syllabic structure are set out and discussed in Chapter 6. A tonemic interpretation of the irreducible minimum number of tonal contrasts is offered. Chapter 6 brings the study to a conclusion.

ACKNOWLEDGEMENTS

I owe a great debt to my supervisor, Professor Eugénie J.A. Henderson, without her this thesis would not have come into existence. She kindly helped and guided me through all my difficulties; patiently correcting my mistakes. I would like to take this opportunity to express my enduring gratitude and deepest thanks to her.

I am particularly indebted to my dear parents who supported my study in the United Kingdom, and encouraged me in every way with their understanding and great patience.

My gratefulness and thanks are due to Mr A.W. Stone, the Chief Technician of the School, who organized the experimental works and photographic presentation of the results for me.

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S.O.A.S.
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February, 1978

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CHAPTER 1

INTRODUCTION

Geographical and Linguistic Background

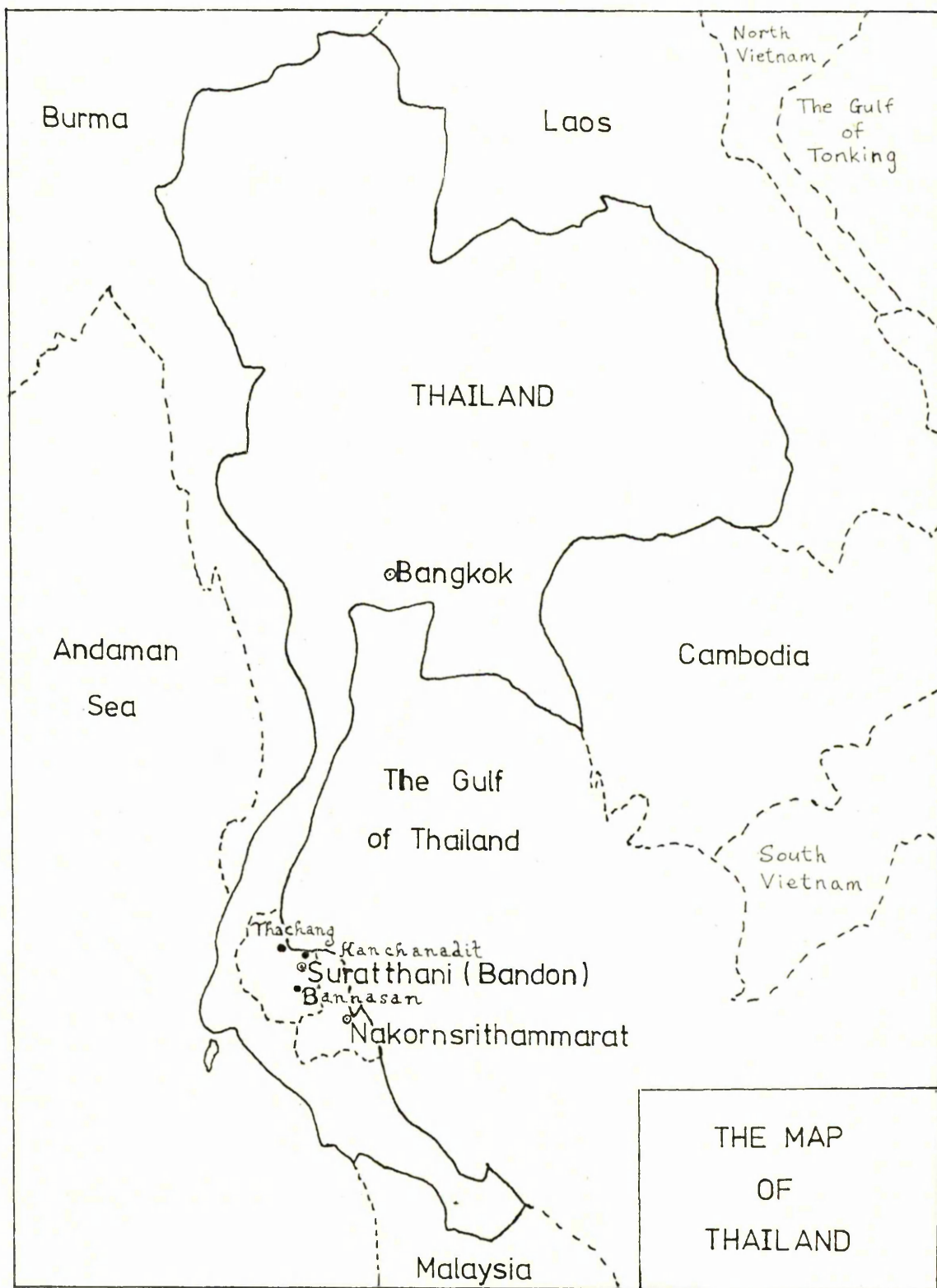
Suratthani, with a population of about 500,000, is one of the provinces in the southern part of Thailand and is flanked on the East by the Gulf of Thailand. (See the map on page 2.) Thailand is divided into provinces, the provinces into Amphoes, and the Amphoes into Tambons. Each province has a capital Amphoe called 'Amphoe Mueang' followed by the name of the province; 'Amphoe Mueang Suratthani' is the capital Amphoe of Suratthani, and 'Amphoe Mueang Nakornsri-
thammarat' is the capital Amphoe of Nakornsri-
thammarat, etc. Suratthani is composed of 14 Amphoes with 104 Tambons.

People from Amphoe to Amphoe may speak Suratthani dialect¹ with a different accent. By 'accent' I mean differences in the pronunciation especially of the tones. Even though there may in some Amphoes be variation both in the number of tones and in their pronunciation as compared with Amphoe Mueang, the accents are mutually intelligible.

This thesis presents a synchronic study of the phonetics and phonology of the Suratthani dialect. It covers only Amphoe Mueang, or 'Bandon', the old name which is still in colloquial use at the present day. This thesis, in which my function was that of my own informant, may be considered as the study of an idiolect representing the Suratthani dialect spoken in Bandon (Amphoe Mueang).

My family are settled in Bandon (Amphoe Mueang). My parents are Suratthani people who speak Suratthani dialect

¹Further detail on other Thai dialects see Jim M. Brown, 'From Ancient Thai to Modern Thai Dialects', 1965.



with a Bandon accent. My mother was born and educated in Bandon, but my father was born in Tambon Changoe, Amphoe Kanchanadit. He was brought up in a family that used Suratthani dialect with a Kanchanadit accent. He came to study in a secondary school in Bandon and worked there afterwards. Bandon accent has affected his pronunciation ever since. When he speaks to his children or to other southern people except the people from his native village, he always uses Bandon accent.

I was born in Amphoe Thachang, but was brought up in Bandon from a very early age. The Suratthani dialect with the Bandon accent was the language used at home, among schoolfriends, and other southern people, although 'Standard Thai' was taught at school. My father, because of his career as a forestry clerk, has to move from Amphoe to Amphoe in Suratthani. After my elementary education in Bandon, I followed my parents to live in Amphoe Bannasan where I studied in a secondary school for three years. There, my Bandon accent was quite different from the Bannasan accent. I retained the Bandon accent because it was the accent of a capital Amphoe and so was considered to be more refined than the Bannasan accent. During vacations, my brother, sisters and I often went back to Bandon. Afterwards, I was sent to Bangkok to study in a high school for a further two years which was then followed by four years' university education.

Before coming to London, I worked in Amphoe Mueang Nakornsri Thammarat province for two years. There I communicated via my Suratthani dialect; both in vocabulary and accent.

I have checked my pronunciation with the recorded tapes, that my parents sent from home, of a conversation between my mother and my brother. My pronunciation may be considered to be typical educated Suratthani pronunciation from Bandon (Amphoe Mueang).

Scope of the Thesis

The study of phonetics and phonology of the Suratthani dialect sets out a description of the consonants, vowels and tones, and pays particular attention to variations between the tonal behaviour of monosyllabic words in isolation and of two syllable sequences of different kinds. An explanation is made descriptively from a phonetic basis and abstracted onto phonemic level. Selected palatograms and tonograms were made in the Phonetics Laboratory, with the help of Mr A.W. Stone, the Chief Technician of the School, under Professor Eugénie J.A. Henderson's supervision. Palatogram and Tonogram grids for use with the illustrations in the text are at the back of the thesis. No detailed attempt has been made to explain the results in terms of acoustic phonetics.

Palatograms are used in Chapter 2 to illustrate the articulation of consonants and in order to determine the Place of Articulation and Manner of Articulation more accurately. Sonograms in Chapter 3 were made to compare and check the length of the diphthongs, /iə/ and /i:ə/ respectively, which are not differentiated in Standard Thai. Tonograms in Chapters 4 and 5 are shown to illustrate the characteristic pitch behaviour of the tones. Since the tonograms in these two chapters were made at different times and with different settings of the pitch meter, it has been necessary to make two separate Tonogram grids, one for use with the illustrations in Chapter 4, the other for those in Chapter 5.

CHAPTER 2

THE CONSONANT SYSTEM

In the course of my investigation of the consonants in my own pronunciation certain articulations were examined with the aid of a false palate made by Mr. A.W. Stone. Over a period of nearly two years, palatograms were made at regular weekly intervals until it was possible to recognize regularly recurring characteristic palatograms for the utterances investigated. These were both of words uttered in isolation and of short sentences containing the 'target' sounds, which it was hoped would capture a more 'natural' colloquial style of pronunciation than might be the case with utterances of individual words. The photographs of palatograms used to illustrate this thesis were made towards the end of my investigation, when it was possible to identify them as 'typical' of the utterances concerned. It became apparent quite early on that articulations which without the evidence of the palatograms I might have classed together as 'alveolar' show quite a wide range of variation, with certain regular differences between them; as for example between initial and final t's, and between s's as contrasted with t's, etc. Without the evidence of X-rays to show the precise shape and movement of the tongue it is often difficult to relate these differences to the articulatory processes they illustrate, and my suggestions must here be taken as tentative only. I have also found a need for more articulatory labels than are conventionally used within the I.P.A. system, in order to correlate differences in the palatograms with different labels. The labels I have used are explained below. The description of reference to 'zones' on a grid of my palate (contained in an envelope at the back of the thesis) follows that

used by J.R. Firth.¹

Articulation Labels

1. Denti-alveolar: refers to an articulation regularly showing a wide wipe extending from either zone 1 or zone 2 to zones 3 or 4 and beyond. (See Figs. 1, 3, 4, 5 and 6 on pages 10 and 13.)
2. Alveolo-dental: refers to an articulation regularly showing a narrow wipe concentrated upon zone 3, occasionally the wipe extends forward to zone 2 or slightly to zone 1, but never behind zone 3. (See Figs. 12, 13, and 14 on page 21.)
3. Alveolar: refers to an articulation regularly showing a narrow wipe or a light touch in zone 4, always extending forward to zone 3. (See Figs. 2, 7, 18, and 19 on pages 10, 13 and 25.)
4. Post-alveolar: refers to an articulation regularly showing a wipe in zone 4 and sometimes extending slightly further back (see Figs. 15, 15a and 17 on page 23), or a light touch in zone 4 extending slightly forward to zone 3 (see Fig. 20 on page 25.)
5. Alveolo-palatal: refers to an articulation regularly showing a wide wipe extending

¹For the technique of palatography see J.R. Firth, 'Word-palatograms and articulation', BSOAS, XII, 3 and 4, 1948, 857-64, and J.R. Firth and H.J.F. Adam, 'Improved techniques in palatography and Kymography', BSOAS, XIII, 3, 1950, 771-4.

from zone 3 to zones 4 and 5 and occasionally with areas of contact behind these in zones 6 and 7. (See Figs. 9, 10, 11 and 16 on pages 18 and 23.)

In addition to problems of terminology and analysis relating to Place of Articulation, problems relating to Manner of Articulation were also encountered. A further unexpected finding resulting from the palatograms was the fact that the most common 'wipe' for my [s] sound showed complete contact across the palate i.e. the kind of picture one would expect of a stop of some sort rather than a fricative. As is explained on page 20 (see Figs. 12, 13 and 14 on page 21), it appears that the escape of air for my [s] is lateral rather than central. My supervisor had not observed this with other Thai speakers, but the stop-like picture is a reminder of the rather tense character of the [s] of many Thai speakers. [One Thai phonetician of my acquaintance transcribes her own [s] as [ts], and regards it as a weak affricate]. This potential 'tenseness' of [s] may perhaps be linked with the fact that palatograms of [j] also very frequently show a very extensive wipe right across the palate, which also poses problems of analysis and description. The sound is sometimes rather [ɟ] like; at other times like [d̟j]. On other occasions, it simply sounds like a rather tense [j]. These perceptual impressions correspond with what is heard in the pronunciation of other Thai speakers. It is suggested that there may be an articulatory tendency among Thais to make a fairly firm palate contact prior to the actual start of phonation for a voiced fricative. Mrs E.M. Whitley, who was asked, as a professional phonetician with no previous knowledge of Thai, to listen and make 'impartial' judgments of my [j] sounds, has suggested the term 'pretensing' for the phenomenon, and that is the term I have adopted in this thesis.

Description of the Consonant Phonemes with Examples

Suratthani has twenty-one consonant phonemes, as follows:

/p/ is realized as a voiceless unaspirated bilabial plosive. It occurs in syllable-initial position before vowels, and before following /l/ and /r/ as clusters, and in syllable-final position after vowels. In syllable-final position it is always unexploded and glottalized, i.e. pronounced with simultaneous glottal closure [pʔ], both in isolated and in connected utterances, but in syllable-initial position it tends to be glottalized [pʔ] only in an isolative style of utterance, i.e. as in pronouncing words in isolation.

Examples:

| | |
|-----------------------|-------------|
| /pi: ³ / | 'year' |
| /pe:ŋ ⁶ / | 'powder' |
| /plɔ:p ⁷ / | 'to soothe' |
| /pla: ³ / | 'fish' |
| /priəu ⁶ / | 'sour' |
| /pra:p ⁷ / | 'to subdue' |

/ph/ is realized as a voiceless aspirated bilabial plosive. It occurs only in syllable-initial position before vowels, and before following /l/ and /r/ as clusters which are interpreted phonemically as /phl/ and /phr/ (see under /l/ and /r/ about clusters on page 24).

Examples:

| | |
|-----------------------|--------------|
| /phe:n ¹ / | 'plan' |
| /phit ² / | 'wrong' |
| /phu: ⁶ / | 'male' |
| /phlu: ³ / | 'betel leaf' |

| | |
|------------------------|----------------|
| /phlat ⁵ / | 'to fall down' |
| /phrɔ:m ⁴ / | 'ready' |
| /phra:ʔ ⁷ / | 'monk' |

/b/ is realized as a voiced bilabial plosive. It occurs only in syllable-initial position before vowels.

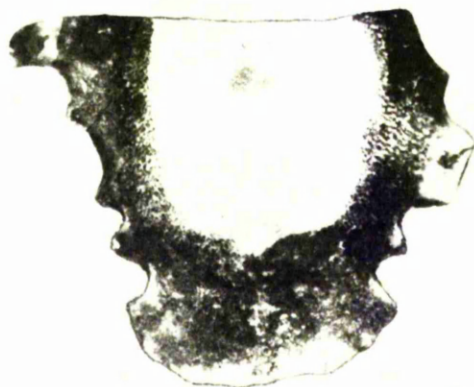
Examples:

| | |
|----------------------|-------------|
| /ba: ³ / | 'shoulders' |
| /bin ³ / | 'to fly' |
| /ba: ⁶ / | 'mad' |
| /ba:n ⁶ / | 'house' |
| /bɔ:k ⁷ / | 'to tell' |
| /bat ⁷ / | 'card' |

/t/ is realized in syllable-initial position as a voiceless unaspirated denti-alveolar (see Figs. 1 and 3 on page 10), and in syllable-final position as an alveolar plosive (see Fig. 2 on page 10). It occurs in syllable-initial position before vowels, and before following /r/ as a cluster, and in syllable-final position after vowels. In syllable-final position it is always unexploded and glottalized [ʔtʰ], both in isolation or in connected utterances, but in syllable-initial position it tends to be glottalized [ʔt] in isolative style; but not always in connected utterances.

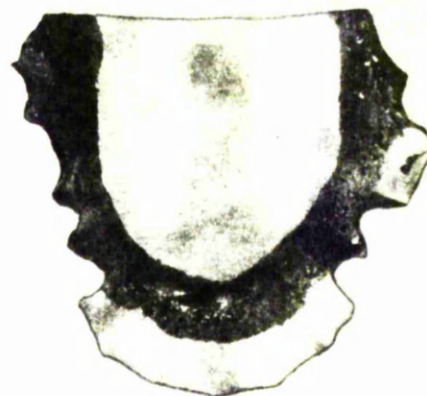
Examples:

| | |
|-----------------------|------------|
| /ti: ³ / | 'to beat' |
| /tu: ⁶ / | 'cupboard' |
| /tat ⁷ / | 'to cut' |
| /khɔt ⁵ / | 'bent' |
| /tra: ³ / | 'seal' |
| /trɔ:k ⁷ / | 'lane' |



1. ma:³ ha:¹ ta:³

'I came to visit Grandfather.'



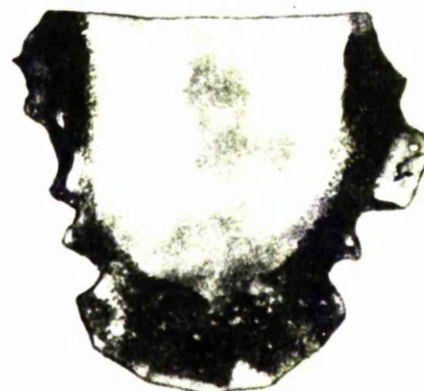
2. pha:⁶ hot²

'The clothes were shrunk.'



3. ma:³ ta:³ m pho:⁷

'I came to look for Father.'



4. pho:⁷ ma:³ tham³ mai¹

'Why did Father come here ?'

The cluster /tr/, for some speakers, is in free variation with /kr/, /t/, or /pl/. For example, the word 'seal' may be pronounced either [tra:³] or [kra:³]; the word 'straight' may be pronounced [troj³] ~ [kroj³] ~ [toj³]; and the word 'to prepare, to get ready' may be pronounced [tri:əm³] ~ [kri:əm³] ~ [pli:əm³]. In my pronunciation, I always pronounce [tr] not [kr], or [t], or [pl] in such words.

From the results of the experiments with the false palate in connected utterances (see Figs. 1, and 3), it regularly appeared that initial [t] showed a wipe extending from the front teeth to the back of the alveolar ridge ('denti-alveolar'). The wipe was darker in the alveolar region suggesting that contact here was firmer. It is assumed that the firmer alveolar contact is laminal, with the tip in lighter contact with the front teeth. Unfortunately by the time I came to photograph typical palatograms for the thesis the false palate had worked rather loose so that with the firmer tensor contact made when pronouncing and beginning with a [t] in isolation, the palate tended to move and drop before the contact was released. Hence, the photographs at Figs. 1 and 3 are of short fairly rapid connected utterances, in which the [t] contact was not tense enough to dislodge the palate. The denti-alveolar contact of the syllable-initial [t] in Figs. 1 and 3 is, however, still clearly visible. In syllable-final position the wipe was regularly much narrower, and concentrated in the alveolar region. (See Fig. 2).

/th/ is realized as a voiceless aspirated denti-alveolar plosive (see Fig. 4 on page 10). It occurs only in syllable-initial position before vowels.

Examples:

| | |
|-----------------------|-----------------|
| /thi: ¹ / | 'very close' |
| /thɔ:t ² / | 'to take off' |
| /the: ³ / | 'to throw away' |

| | |
|-----------------------|-------------|
| /the: ⁴ / | 'real' |
| /thup ⁵ / | 'to hit' |
| /tha: ⁶ / | 'to wait' |
| /thiəu ⁷ / | 'to travel' |

/d/ is realized as a voiced denti-alveolar plosive (see Fig. 5 on page 13). It occurs only in syllable-initial position before vowels.

Examples:

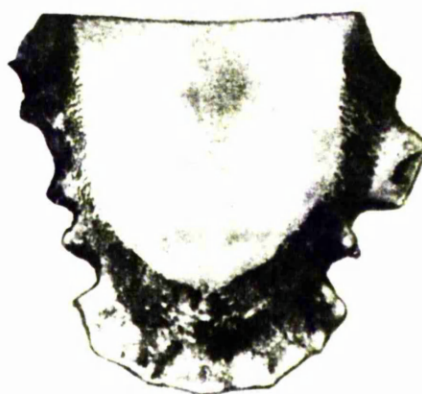
| | |
|----------------------|-----------|
| /di: ³ / | 'good' |
| /daŋ ³ / | 'loud' |
| /da:i ⁶ / | 'thread' |
| /duəi ⁶ / | 'too' |
| /du:k ⁷ / | 'bone' |
| /do:t ⁷ / | 'to jump' |

/k/ is realized as a voiceless unaspirated velar plosive. The place of articulation varies according to the influence of the following vowel, i.e. the pronunciation before a front vowel as in [ki:⁶] 'how much, how many' (see Fig. 8 on page 13) is more forward as compared with a back vowel as in [kɔ:³] 'clump' which did not show a wipe on my false palate. These various sounds are interpreted as the allophones of the same phoneme /k/.

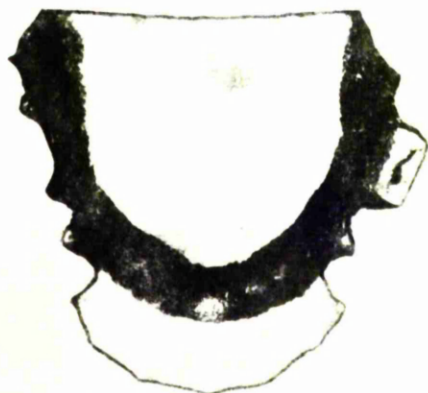
/k/ occurs in syllable-initial position before vowels, and before following /l/, /r/, and /w/ as clusters, and in syllable-final position after vowels. In syllable-final position, it is always unexploded and glottalized [ʔkʰ] both in isolative and connected utterances; but in syllable-initial position it tends to be glottalized [ʔk] in isolative style but not always in connected utterances.



5. phə:⁷ ma:³ du:³ mə:⁷
'Father came to see Mother.'



6. ma:³ ha:¹ na:⁴
'I came to visit Aunty.'



7. khwan³
'smoke'



8. ki:⁶ bai³
'How many leaves are there ?'

Examples:

| | |
|-----------------------|--------------------------|
| /kiŋ ³ / | 'the branch of the tree' |
| /ke: ⁶ / | 'to correct' |
| /kak ⁷ / | 'to detain' |
| /klai ³ / | 'far' |
| /krɔ: ⁶ / | 'rattan ball' |
| /kwa:t ⁷ / | 'to sweep' |

For some speakers the occurrence of /k/ after a long vowel is in free variation with /ʔ/. Other speakers do not have /k/ in such contexts; they will use /ʔ/ instead. In my own pronunciation, however, in such words, I always pronounce [ʔk¹] not [ʔ], e.g. some people say [he:ʔk¹²] ~ [he:ʔ²] 'be torn off', [pa:ʔk¹⁷] ~ [pa:ʔ⁷] 'mouth'; others say [he:ʔ²], [pa:ʔ⁷]; but I say [he:ʔk¹²], [pa:ʔk¹⁷]. But when phoneme /k/ occurs in syllable-final position after short vowels, both types of speakers will use [ʔk¹], e.g. [haʔk¹²], 'broken', [kaʔk¹⁷] 'to detain', etc.

In the pronunciation of some speakers [kl] may be in free variation with [k] in some words as in [klɔ:ŋ³] ~ [kɔ:ŋ³] 'drum', [kluəi⁶] ~ [kuəi⁶] 'banana'. In my pronunciation, I always pronounce [kl] not [k] in such words.

/kh/ is realized as a voiceless aspirated velar plosive. The place of articulation also varies according to the influence of the following vowel, similar to the phoneme /k/.

/kh/ occurs only in syllable-initial position before vowels, and before following /l/, /r/, and /w/ as clusters.

Examples:

| | |
|----------------------|-------------|
| /khi: ¹ / | 'to ride' |
| /khat ² / | 'to polish' |

| | |
|------------------------|-----------------------|
| /khlɔ: ³ / | 'side by side' |
| /khra:n ⁴ / | 'lazy' |
| /khrɔk ⁵ / | 'mortar' |
| /khwam ⁶ / | 'to turn upside down' |
| /khwa:ŋ ⁷ / | 'to throw' |

In the pronunciation of some speakers [khw] may be in free variation with [f] as in [khwa:⁴] ~ [fa:⁴] 'to grasp', and a number of other words, e.g. [khwa:n¹] ~ [fa:n¹] 'hammer', [khwit²] ~ [fit²] 'to gore', [khwan³] ~ [fan³] 'smoke', and [khwa:i³] ~ [fa:i³] 'buffalo'. In my pronunciation, I always pronounce [khw] not [f] in such words.

/ʔ/ is realized as a glottal plosive. It occurs in syllable-initial position before vowels, and in syllable-final position after long vowels on the high level and low rising tones.

Examples:

| | |
|-----------------------|--|
| /ʔa: ³ / | 'younger brother or sister of one's mother' |
| /ʔau ³ / | 'to take' |
| /ʔa:ŋ ⁶ / | 'to refer to' |
| /ʔɔ: ⁶ / | 'giant reed' |
| /hɔ:ʔ ² / | 'to float through the air' |
| /kra:ʔ ⁷ / | 'hawkbill' |

When the phoneme /ʔ/ occurs in syllable-final position e.g. /pa:ʔ⁷/ 'to patch', [ʔ] may be deleted in connected utterances.

/m/ is realized as a voiced bilabial nasal. It occurs both in syllable-initial and syllable-final positions before and after vowels.

Examples:

| | |
|----------------------|------------|
| /mi: ¹ / | 'bear' |
| /mɔ:k ² / | 'fog' |
| /mɛ:ŋ ³ / | 'insect' |
| /mɛt ⁵ / | 'seed' |
| /ma:m ⁴ / | 'spleen' |
| /tham ⁶ / | 'cave' |
| /rɔm ⁷ / | 'umbrella' |

/n/ is realized in syllable-initial position as a voiced denti-alveolar nasal (see Fig. 6 on page 13). In syllable-final position it regularly shows an alveolar wipe (see Fig. 7 on page 13). /n/ occurs both in syllable-initial and syllable-final positions before and after vowels.

Examples:

| | |
|----------------------|----------------|
| /ni: ¹ / | 'to escape' |
| /na:t ² / | 'size' |
| /nɔ:n ³ / | 'to sleep' |
| /nen ⁴ / | 'to emphasize' |
| /nɔk ⁵ / | 'bird' |
| /nuŋ ⁶ / | 'to steam' |
| /ja:n ⁷ / | 'vine' |

/ŋ/ is realized as a voiced velar nasal. The place of articulation varies according to the influence of the following vowel, similar to the phonemes /k/ and /kh/. /ŋ/ occurs both in syllable-initial and syllable-final positions before and after vowels.

Examples:

| | |
|----------------------|-----------------------|
| /ŋa:i ¹ / | 'to turn the face up' |
| /ŋɔ:k ² / | 'grey hair' |

| | |
|-----------------------|------------------|
| /ɲoŋ ³ / | 'confused' |
| /ɲiu ⁴ / | 'Chinese drama' |
| /ɲat ⁵ / | 'to force up' |
| /du:əŋ ⁶ / | 'coconut beetle' |
| /ɲa:i ⁷ / | 'easy' |

Some speakers do not have a [ɲ] sound in syllable-initial position. An [h] sound is used here instead, e.g. for my /ɲɔ:m³/ 'ripe', /ɲoŋ³/ 'confused', they pronounce [hɔ:m³], [hoŋ³]. I interpret this as a difference of phonemic structure, i.e. that such speakers use an /h/ phoneme in these words.

/c/ is usually realized as what is here labelled a voiceless unaspirated alveolo-palatal affricate (see Figs. 9 and 10 on page 18). Palatograms regularly show a more or less firm broad band of contact extending from zone 3 back to zone 5. There are also frequently signs of a lighter contact in zones 6 or 7, from which it appears that the main body of the tongue behind the blade is raised sufficiently high towards the hard palate to make contact; especially where my palate shows a slight raised 'hump' in the centre of zone 7. To the ear, my pronunciation of [c] is often very close to that of a true palatal plosive, but the palatograms regularly show a concentration of contact in the zones 3, 4, and 5, which supports the label 'alveolo-palatal' rather than palatal.

/c/ occurs only in syllable-initial position before vowels.

Examples:

| | |
|----------------------|---------------------|
| /ca:³/ | 'sergeant' (Fig. 9) |
| /cɔ:ŋ ³ / | 'to book' |
| /ci:⁶/ | 'to tickle' |



9. ca:³
'Sergeant'



10. phɔ:⁷ ca⁶ ma:³ ha:¹
'Father will come to visit you.'



11. mu:³ phom¹ cha:³ ma:⁷k
'My hands are getting very numb.'

| | |
|----------------------|---------------|
| /cɔ:ŋ ⁶ / | 'to stare at' |
| /cɔ:k ⁷ / | 'glass' |
| /ce:k ⁷ / | 'to give' |

/ch/ is realized as a voiceless aspirated alveolo-palatal affricate, showing much the same areas of contact in palatograms as /c/ (see Fig. 11 on page 18). It occurs only in syllable-initial position before vowels.

Examples:

| | |
|-----------------------|---------------|
| /che: ¹ / | 'to disclose' |
| /chi:k ² / | 'to tear' |
| /cha: ³ / | 'numb' |
| /chi: ⁴ / | 'to point at' |
| /chet ⁵ / | 'to wipe' |
| /chɔ: ⁶ / | 'to cheat' |
| /chɯ: ⁷ / | 'name' |

/f/ is realized as a voiceless labio-dental fricative. It occurs only in syllable-initial position before vowels.

Examples:

| | |
|----------------------|--------------|
| /fon ¹ / | 'rain' |
| /fa:t ² / | 'astringent' |
| /fai ³ / | 'fire' |
| /fɔ:ŋ ⁴ / | 'to accuse' |
| /fɔ:k ⁵ / | 'swollen' |
| /fa:i ⁶ / | 'cotton' |
| /fa:t ⁷ / | 'to slap' |

In the pronunciation of some speakers [f] may be in free variation with [khw] as in [fai³] ~ [khwai³] 'fire', and a number of other words, e.g. [fa:¹] 'wall',

[fan³] 'tooth', and [fa:⁴] 'sky', etc. In my pronunciation, I always pronounce [f] not [khw] in such words.

/s/ is realized as a voiceless alveolo-dental fricative (see Figs. 12, 13, and 14 on page 21). It is interesting to note that Fig. 14 shows the kind of 'wipe' that might ordinarily be associated with a stop rather than a fricative, but the sound perceived was clearly a fricative. In an informal experiment to discover where the air was escaping, my supervisor put a lighted match in front of my mouth and to the right side, but the flame did not flicker. It was not until she put the lighted match in front of the left side of my mouth that flickering of the flame was visible. This confirms that the escape of air for my [s] is lateral, as is also indicated by the palatograms in Figs. 12 and 13. The sound occurs in syllable-initial position before vowels only.*

Examples:

| | |
|----------------------|----------------|
| /si: ¹ / | 'colour' |
| /sip ² / | 'ten' |
| /sɔ: ³ / | 'fiddle' |
| /sw: ⁴ / | 'to buy' |
| /sak ⁵ / | 'to wash' |
| /so: ⁶ / | 'chain' |
| /sɛ:k ⁷ / | 'to interfere' |

For some speakers their [s] is slightly retróflex [ʂ] in their pronunciation, and sometimes they pronounce this [ʂ] sound in free variation with [s]. I interpret these [s] and [ʂ] sounds, for these speakers, as the allophones of the phoneme /s/. In my pronunciation, I always pronounce [s] not [ʂ].

/j/ is realized as a pre-tensed (see page 7) voiced

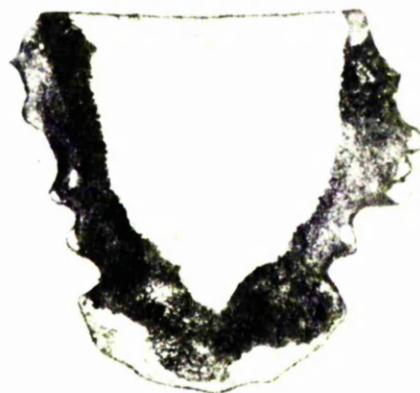
*Unfortunately the palatograms on page 21 and elsewhere have inadvertently been reproduced so as to make it appear that the escape of air was on the right rather than the left side.



12. ³ma: ⁴su: ⁴ma:
'I came to buy a horse.'



13. ⁶sa ⁶na:
'A proper name 'Sanga''



14. [s]
'An illustration of the sound [s]'

post-alveolar (see Figs. 15, 15a, and 17 on page 23), or alveolo-palatal fricative (see Fig. 16 on page 23). The continuous contact in zone 4 seen very clearly in Figs. 15, 15a, and 17, is ascribed to the 'pre-tensing' described on page 7, and is not taken as an indication of a plosive articulation; though sometimes a brief plosive is perceived before the following friction. The extensive wipes in zones 5, 6, and 7 in Fig. 16, and a wipe in zone 7 in Fig. 17 are taken as indications of the raising of the main body of the tongue towards the hard palate. My palate has a raised 'hump' in the centre of zone 7, and this is often brushed by the tongue in articulations of this sound.

/j/ occurs only in syllable-initial position before vowels.¹

Examples:

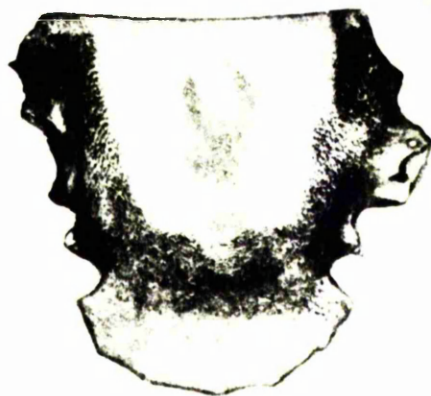
| | |
|----------------------|----------------------|
| /ja: ¹ / | 'medicine' (Fig. 16) |
| /jɔ:k ² / | 'to kid' |
| /ja:u ³ / | 'long' |
| /jɔ:i ⁴ / | 'drooping' |
| /jɔ:k ⁵ / | 'to lift' |
| /juŋ ⁶ / | 'busy' |
| /ja:k ⁷ / | 'difficult' |

/h/ is realized in most contexts as a voiceless glottal fricative. It occurs only in syllable-initial position before vowels.

Examples:

| | |
|----------------------|-------------|
| /hɔ:i ¹ / | 'sheel' |
| /hɔ:t ² / | 'to shrink' |

¹ Note the fact that /j/ is not taken as final element of diphthongs as in many phonemic interpretations of Thai.



15. phə:⁷ jo:³ me:⁷

'Father flattered Mother.'



15a. phə:⁷ jo:³ me:⁷



16. ja:¹
'medicine'



17. mu:³ ja:³ u:⁷
'My hands are long.'

| | |
|---------------------|--------------------------|
| /ha: ³ / | 'to laugh loudly' |
| /ha: ⁴ / | 'swear word' |
| /hwt ⁵ / | 'furry' |
| /hiu ⁶ / | 'to carry' |
| /ha: ⁷ / | 'particle in a sentence' |

In connected speech, /h/ between voiced sounds may be realized as [ɦ].

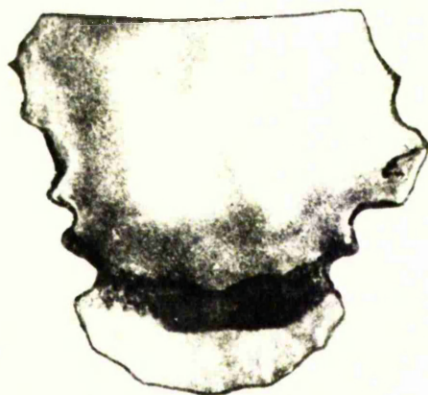
/l/ is realized as a voiced alveolar lateral (see Figs. 18 and 19 on page 25). It occurs in syllable-initial position before vowels, and is combined with preceding /p/, /ph/, /k/, and /kh/ as clusters.

Examples:

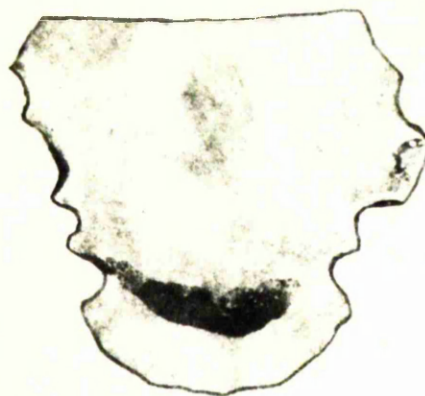
| | |
|------------------------|------------------------|
| /lai ¹ / | 'to flow' |
| /lek ² / | 'iron' |
| /lɔːŋ ⁷ / | 'to raft logs down' |
| /pliu ³ / | 'to be blown' |
| /phlat ⁵ / | 'to fall' |
| /kleːŋ ⁶ / | 'to do spite fully' |
| /khlɔːŋ ⁴ / | 'to lasso with a rope' |

In Standard Thai there is often an allophone [l̥] in /phl/ and /khl/ clusters, but in my own pronunciation I have a voiced allophone in these contexts.

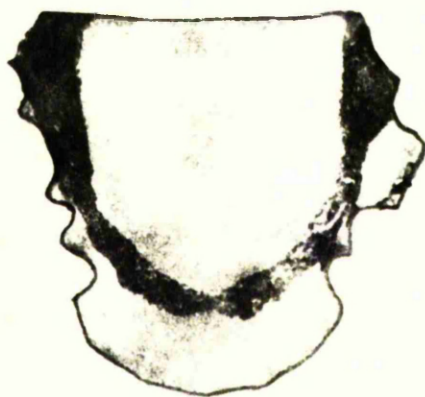
/r/ is usually realized as a voiced post-alveolar flap (see Fig. 20 on page 25). It occurs in syllable-initial position before vowels and is combined with preceding /p/, /ph/, /k/, and /kh/ as clusters. There is a fricative or a frictionless continuant allophone [ɺ] (see Fig. 21 on page 25), found in the sequences [phɺ], [khɺ] which are interpreted as realization of phonemic /phr/ and /khr/.



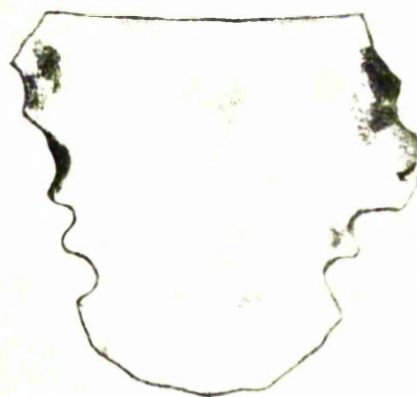
18. pho:⁷ ma:³ lɛ:⁴u
'Father has already come.'



19. pla:³
'fish'



20. ru:³
'hole'



21. phra:⁴u
'coconut'

Standard Thai sometimes has a voiceless allophone [ɿ] in such sequences, but in my own pronunciation I have a voiced allophone.

Examples:

| | |
|-----------------------|-------------------------------|
| /rɔ:i ¹ / | 'delicious' |
| /rit ² / | 'manner' |
| /ru: ⁴ / | 'to know' |
| /pra:ŋ ³ / | 'stupa' |
| /phrɔk ⁵ / | 'the shell of the coconut' |
| /krɔ: ⁶ / | 'rattan ball' |
| /khra: ⁷ / | 'to abduct' |

In the pronunciation of some speakers [r] may be in free variation with [l] as in [ruəi³] ~ [luəi³] 'rich', [rak⁵] ~ [lak⁵] 'to love', etc. In my pronunciation, I always pronounce [r] not [l].

/w/ is realized as a voiced labio-velar approximant. It occurs in syllable-initial position before vowels¹, and is combined with preceding /k/ and /kh/ as clusters.

Examples:

| | |
|------------------------|------------------------|
| /wa:ŋ ¹ / | 'morning' |
| /wit ² / | 'to scoop' |
| /wik ⁵ / | 'cinema' |
| /kwa:ŋ ⁶ / | 'wide' |
| /kwe:k ⁷ / | 'to push others aside' |
| /khwa:i ³ / | 'buffalo' |
| /khwa: ⁴ / | 'to grasp at' |

¹Note that /w/ is not taken as final element of diphthongs as in many phonemic interpretations of Thai.

CHAPTER 3

THE VOWEL SYSTEM

The Suratthani vowel system has distinctive length. The qualities of the short and long vowels are not greatly different. The phoneme system comprises nine short and nine long vowel phonemes, eight short diphthong phonemes, ten long ones, and three triphthong phonemes, as follows.

Short and Long Vowel Phonemes

/i/ is realized as a close, front, unrounded, short vowel; slightly more open and retracted than ¹Cardinal Vowel₁ [i]. From now on the Cardinal Vowels will be abbreviated to CV.

Examples:

| | |
|----------------------|------------|
| /khit ² / | 'to nudge' |
| /cip ⁷ / | 'to sip' |
| /lin ⁴ / | 'tongue' |
| /khit ⁵ / | 'to think' |

/i:/ is realized as a close, front, unrounded, long vowel; slightly more open and retracted than CV₁ [i].

Examples:

| | |
|-----------------------|-------------------------------|
| /khi:t ² / | 'to draw a line' |
| /ci:p ⁷ / | 'to roll' (the betel leaf) |

¹Cardinal Vowel system see Daniel Jones, 'an Outline of English Phonetics', ninth edition, p. 31-39.

| | |
|---------------------|----------|
| /si: ¹ / | 'colour' |
| /ni: ⁶ / | 'debt' |

/e/ is realized as a half-close, front, unrounded, short vowel; more open and more retracted than CV₂ [e].

Examples:

| | |
|----------------------|-----------|
| /khen ¹ / | 'to pull' |
| /ʔen ³ / | 'sinew' |
| /tem ³ / | 'full' |
| /wen ⁴ / | 'except' |

/e:/ is realized as a half-close, front, unrounded, long vowel; more open and more retracted than CV₂ [e].

Examples:

| | |
|-----------------------|-------------|
| /khe:n ¹ / | 'robin' |
| /ʔe:n ³ / | 'reclining' |
| /te:ʔ ⁷ / | 'to kick' |
| /khe: ⁶ / | 'crocodile' |

/e/ is realized as a half-open, front, unrounded, short vowel. In my pronunciation the quality of this vowel appears to be somewhat unstable, the degree of openness varying between a vowel rather closer than CV₃ [e] and one which is slightly more open than the vowel /e/. It is also slightly centralized.

Examples:

| | |
|---------------------|------------|
| /det ⁷ / | 'to pluck' |
| /lek ² / | 'iron' |
| /jep ⁵ / | 'to sew' |
| /len ⁶ / | 'to play' |

/e:/ is realized as a half-open to open, front, unrounded, long vowel; intermediate between the position for CV₃ [e] and CV₄ [a]; like the English RP (English Received Pronunciation) vowel [ɜ] as pronounced by many speakers.

Examples:

| | |
|----------------------|------------|
| /de:t ⁷ / | 'sunshine' |
| /le:k ² / | 'crushed' |
| /the: ⁴ / | 'real' |
| /ke: ³ / | 'old' |

/a/ is realized as an open, unrounded, short vowel; between CV₄ [a] and CV₅ [ɑ], but rather closer to CV₄ [a].

Examples:

| | |
|---------------------|-------------|
| /pan ³ / | 'to divide' |
| /fat ² / | 'to winnow' |
| /ʔap ⁷ / | 'stuffy' |
| /mat ⁵ / | 'to tie' |

/a:/ is realized as an open, unrounded, long vowel; between CV₄ [a] and CV₅ [ɑ], but rather closer to CV₄ [a].

Examples:

| | |
|----------------------|--------------|
| /pa:n ³ / | 'birthmark' |
| /fa:t ² / | 'astringent' |
| /ʔa:p ⁷ / | 'to bathe' |
| /ma: ⁴ / | 'horse' |
| /pa:ʔ ⁷ / | 'to patch' |

/ɔ/ is realized as a half-open, back, rounded, short vowel; close to CV₆ [ɔ] in quality.

Examples:

| | |
|-----------------------|------------------|
| /pɔ̌k ⁷ / | 'cover' |
| /khɔ̌p ² / | 'to bite' |
| /khɔ̌n ⁴ / | 'to search' |
| /thɔ̌p ⁵ / | 'to fold double' |

/ɔ̌:/ is realized as a half-open, back, rounded, long vowel; close to CV₆ [ɔ̌] in quality.

Examples:

| | |
|------------------------|------------|
| /pɔ̌:k ⁷ / | 'to peel' |
| /khɔ̌:p ² / | 'edge' |
| /khɔ̌:n ⁴ / | 'hammer' |
| /thɔ̌:3/ | 'to weave' |

/o/ is realized as a half-close, back, rounded, short vowel; rather more open than CV₇ [o].

Examples:

| | |
|----------------------|------------|
| /doŋ ³ / | 'jungle' |
| /som ¹ / | 'proper' |
| /khom ¹ / | 'bitter' |
| /kron ³ / | 'to snore' |

/o:/ is realized as a half-close, back, rounded, long vowel; rather more open than CV₇ [o].

Examples:

| | |
|----------------------|-------------|
| /do:ŋ ³ / | 'protruded' |
| /so:m ¹ / | 'ginseng' |
| /lo:k ⁷ / | 'earth' |
| /so: ⁶ / | 'chain' |

/ɤ/ is realized as a half-close, back, unrounded, short vowel; relatively more open than /o:/ and somewhat advanced.

Examples:

| | |
|----------------------|------------------|
| /thɤp ² / | 'to make a move' |
| /ŋɤn ³ / | 'silver' |

/ɤ:/ is realized as a half-close, back, unrounded, long vowel; relatively more open than /o:/ and somewhat advanced.

Examples:

| | |
|------------------------|---------------------------------|
| /phɤ:t ⁷ / | 'to drive off by loud shouting' |
| /khlɤ:m ⁴ / | 'half-sleep' |
| /lɤ:t ² / | 'strayed off' |
| /bɤ: ³ / | 'number' |

/u/ is realized as a close, back, rounded, short vowel; more open and advanced than CV₈ [u].

Examples:

| | |
|----------------------|----------------|
| /khut ² / | 'to dig' |
| /ʔut ⁷ / | 'to plug' |
| /khuk ⁵ / | 'prison' |
| /muŋ ⁶ / | 'mosquito-net' |

/u:/ is realized as a close, back, rounded, long vowel; more open and advanced than CV₈ [u].

Examples:

| | |
|-----------------------|-------------|
| /khu:t ² / | 'to scrape' |
| /ʔu:t ⁷ / | 'camel' |
| /su:n ¹ / | 'lost' |

/khu:⁴/ 'to bend'

In the pronunciation of some speakers, [u:] may be in free variation ^{in some words} with [o:] as in [ru:⁴] ~ [ro:⁴] 'to know', and in some other words e.g. [khu:⁷] 'pairs', [thu:k²] 'correct', etc. In my pronunciation, I always pronounce [u:] not [o:] in such words.

/u/ is realized as a close, back, unrounded, short vowel; more open and advanced than CV₁₆ [u].

Examples:

| | |
|----------------------|------------|
| /fu:k ² / | 'to train' |
| /ju:t ⁵ / | 'to grasp' |
| /mu:n ³ / | 'dizzy' |
| /du:k ⁷ / | 'late' |

/u:/ is realized as a close, back, unrounded, long vowel; more open and advanced than CV₁₆ [u].

Examples:

| | |
|----------------------|--------------|
| /fu:t ² / | 'obstructed' |
| /ju:t ⁷ / | 'to stretch' |
| /mu: ³ / | 'hand' |
| /su: ⁴ / | 'to buy' |

In the pronunciation of some speakers, [u:] may be in free variation with [ɜ:] as in [su:⁴] ~ [sɜ:⁴] 'to buy'. In my pronunciation I always pronounce [u:] not [ɜ:] in this word.

Short and Long Diphthongs

The Suratthani short and long diphthongs can be divided into diphthongs moving towards a central vowel and those moving towards a close vowel.

Diphthongs moving towards a central vowel

It will be observed from the examples below that the short centring diphthongs occur only in onomatopoeic and in Chinese loan words. Moreover, if it were not for the single instance of the onomatopoeic word /ʔiət²/, it would be possible to regard the short diphthongs as the allophones appropriate before a following glottal plosive and the long diphthongs as allophones of the same phonemes occurring in other contexts. However, sonograms of /ʔiət²/ compared with /ni:ət²/, (see Sonos. 1 and 2 on page 34), showed that /ʔiət²/ is definitely shorter than /ni:ət²/ so that the length difference must be regarded as phonemic.

There are three short centring diphthongs and three long ones.

/iə/ is realized as a short centring diphthong; starting with a close, front, unrounded vowel and moving towards a more open, central, unrounded vowel.


Examples:

| | |
|-----------------------|--|
| /phiəʔ ² / | 'the sound of beating' |
| /kiəʔ ² / | 'clogs' |
| /ʔiət ² / | 'an onomatopoeic word' (e.g. the sound of cracking wood) |
| /ciəʔ ² / | 'Chinese loan word' (to eat) |


/i:ə/ is realized as a long centring diphthong; starting with a close, front, unrounded vowel and moving towards a more open, central, unrounded vowel.

Examples:

| | |
|----------------------|---------|
| /ti:ə ⁶ / | 'short' |
|----------------------|---------|



Sono. 1. Ɂiət¹
'an onomatopoeic word' (e.g. the
sound of cracking wood)



Sono. 2. ni:ət²
'to attach'

| | |
|-----------------------|--------------|
| /ki:əp ⁷ / | 'chopsticks' |
| /ni:ət ² / | 'to attach' |
| /li:ə ³ / | 'to lick' |

/uə/ is realized as a short centring diphthong; starting with a close, back, rounded vowel and moving towards a more open, central, unrounded vowel.

Examples:

| | |
|-----------------------|---|
| /phuəʔ ² / | 'an onomatopoeic word' (e.g. the sound of slapping) |
| /cuəʔ ² / | 'an onomatopoeic word' (e.g. an <i>expression describing extreme whiteness</i>) |

/u:ə/ is realized as a long centring diphthong; starting with a close, back, rounded vowel and moving towards a more open, central, unrounded vowel.

Examples:

| | |
|------------------------|-------------------|
| /phu:ək ⁷ / | 'companions' |
| /khru:ə ³ / | 'kitchen' |
| /hu:ə ¹ / | 'head' |
| /lu:əŋ ⁴ / | 'to pick-pockets' |

/ʊə/ is realized as a short centring diphthong; starting with a close, back, unrounded vowel and moving towards a more open, central, unrounded vowel.

Examples:

| | |
|-----------------------|---|
| /chʊəʔ ² / | 'an onomatopoeic word' (e.g. the sound of shooing chickens) |
|-----------------------|---|

/u:ə/ is realized as a long centring diphthong; starting with a close, back, unrounded vowel and moving towards a more open, central, unrounded vowel.

Examples:

| | |
|------------------------|------------|
| /dʍ:ən ³ / | 'month' |
| /chʍ:ək ⁷ / | 'rope' |
| /ɣʍ:ə ¹ / | 'sweat' |
| /sʍ:ə ⁶ / | 'clothing' |

Diphthongs moving towards a close vowel

There are five short closing diphthongs and seven long ones, as follows.

/iu/ is realized as a short closing diphthong; starting with a close, front, unrounded vowel, and moving towards a closer, back, rounded vowel.

Examples:

| | |
|----------------------|----------------|
| /pliu ³ / | 'to blow away' |
| /niu ⁴ / | 'finger' |
| /niu ⁶ / | 'calculus' |
| /hiu ¹ / | 'hungry' |

/eu/ is realized as a short closing diphthong; starting with a half-close, front, unrounded vowel, and moving towards a close, back, rounded vowel.

Examples:

| | |
|---------------------|---------|
| /reu ³ / | 'quick' |
|---------------------|---------|

This appears to be the only example of short /eu/. There are no minimal pairs to demonstrate the phonemic distinction between /eu/ and /e:u/, but /le:u³/ and /reu³/ indicate that they must be treated as separate phonemes.

/e:u/ is realized as a long closing diphthong; starting with a half-close, front, unrounded vowel, and moving towards a closer, back, rounded vowel.

Examples:

| | |
|-----------------------|----------|
| /le:u ³ / | 'bad' |
| /ple:u ³ / | 'flame' |
| /he:u ¹ / | 'chasm' |
| /le:u ¹ / | 'liquid' |

/e:u/ is realized as a long closing diphthong; starting with a half-open, front, unrounded vowel, and moving towards a closer, back, rounded vowel.

Examples:

| | |
|------------------------|------------------|
| /the:u ¹ / | 'row' |
| /khle:u ⁴ / | 'to pass unseen' |
| /ke:u ⁶ / | 'glass' |
| /me:u ³ / | 'cat' |

/au/ is realized as a short closing diphthong; starting with an open, central, unrounded vowel, and moving towards a closer, back, rounded vowel.

Examples:

| | |
|----------------------|--------------|
| /khau ¹ / | 'knee' |
| /kau ³ / | 'to scratch' |
| /hau ¹ / | 'to bark' |
| /rau ³ / | 'we' |

/a:u/ is realized as a long closing diphthong; starting with an open, central, unrounded vowel, and moving towards a closer, back, rounded vowel.

Examples:

| | |
|-----------------------|---------|
| /kha:u ¹ / | 'white' |
|-----------------------|---------|

| | |
|----------------------|----------------|
| /ka:u ³ / | 'glue' |
| /ha:u ¹ / | 'to yawn' |
| /ra:u ³ / | 'clothes-line' |

/ai/ is realized as a short closing diphthong; starting with an open, central, unrounded vowel, and moving towards a closer, front, unrounded vowel.

Examples:

| | |
|----------------------|------------|
| /khai ¹ / | 'egg' |
| /bai ³ / | 'leaf' |
| /ʔai ³ / | 'to cough' |
| /hai ¹ / | 'jug' |

/a:i/ is realized as a long closing diphthong; starting with an open, central, unrounded vowel, and moving towards a closer, front, unrounded vowel.

Examples:

| | |
|-----------------------|----------------|
| /kha:i ¹ / | 'to sell' |
| /ba:i ³ / | 'happy' |
| /ʔa:i ³ / | 'shy' |
| /ha:i ¹ / | 'to disappear' |

/ɔ:i/ is realized as a long closing diphthong; starting with a half-open, back, rounded vowel, and moving towards a closer, front, unrounded vowel.

Examples:

| | |
|-----------------------|------------|
| /khɔ:i ³ / | 'to wait' |
| /sɔ:i ⁶ / | 'necklace' |
| /hɔ:i ¹ / | 'shell' |
| /rɔ:i ⁴ / | 'hundred' |

/o:i/ is realized as a long closing diphthong; starting with a half-close, back, rounded vowel, and moving towards a closer, front, unrounded vowel.

Examples:

| | |
|-----------------------|--------------|
| /pro:i ³ / | 'to bestrew' |
| /mo:i ³ / | 'thief' |
| /ho:i ¹ / | 'to moan' |
| /ro:i ³ / | 'to wither' |

/ɜ:i/ is realized as a long closing diphthong; starting with a half-close, back, unrounded vowel, and moving towards a closer, front, unrounded vowel.

Examples:

| | |
|-----------------------|------------------|
| /khɜ:i ³ / | 'used to' |
| /ɲɜ:i ³ / | 'to look up' |
| /chɜ:i ¹ / | 'to keep silent' |
| /jɜ:i ⁴ / | 'to mock' |

/ui/ is realized as a short closing diphthong; starting with a close, back, rounded vowel, and moving towards a closer, front, unrounded vowel.

Examples:

| | |
|-----------------------|--------------|
| /pui ⁷ / | 'fertilizer' |
| /thui ⁶ / | 'to spit' |
| /khlui ¹ / | 'flute' |
| /lui ³ / | 'to wade' |

Triphthongs

There are three triphthongs, as follows.

/iəu/ is realized as a triphthong which starts with a close, front, unrounded vowel, moves first towards

a more open, unrounded, central vowel, and then towards a closer, back, rounded vowel.

Examples:

| | |
|-----------------------|------------|
| /khiəu ¹ / | 'green' |
| /kiəu ⁶ / | 'to court' |
| /siəu ³ / | 'pale' |
| /liəu ⁴ / | 'to turn' |

/uəi/ is realized as a triphthong which starts with a close, back, rounded vowel, moves first towards a more open, unrounded, central vowel, and then towards a closer, front, unrounded vowel.

Examples:

| | |
|-----------------------|-----------|
| /thuəi ⁶ / | 'bowl' |
| /chuəi ⁷ / | 'to help' |
| /suəi ¹ / | 'pretty' |
| /ruəi ³ / | 'rich' |

/uəi/ is realized as a triphthong which starts with a close, back, unrounded vowel, moves first towards a more open, unrounded, central vowel, and then towards a closer, front, unrounded vowel.

Examples:

| | |
|----------------------|------------|
| /duəi ³ / | 'spur' |
| /mūəi ⁷ / | 'worn out' |
| /nūəi ¹ / | 'tired' |
| /lūəi ⁴ / | 'to crawl' |

CHAPTER 4

THE TONAL SYSTEM-I: The Tones of Monosyllabic
Words Uttered in Isolation.

In this chapter and the following one an attempt is made to describe the tones of the Suratthani dialect, and their phonetic realizations, or 'tonetic variants'. A distinction is made between the tonetic variants themselves, which are described in general phonetic terms, and the tones which are phonological abstractions from these variants, established on the basis of the contrastive pitch levels and contours used to make lexical distinctions between words, without regard to their distribution in relation to syllable structure and segmental phoneme classes. A further distinction is made in this thesis between tones and tonemes. The term toneme is used to describe the irreducible number of contrastive pitch patterns which have linguistic (i.e. lexical) function, when all these considerations such as constraints relating to syllable structure, etc. are taken into account. There are thus two depths of phonological abstraction: the tones, which match the tonetic patterns fairly closely, and in which 'phonetic similarity' plays an important role, and the tonemes, which are one degree more abstract, and in which complementary distribution over types of syllabic structure plays a more important role than 'phonetic similarity' of the pitch contour itself. Thus, while tones may be said to be abstracted from the distribution of the contrastive pitch patterns of syllables, the tonemes may be said to be abstracted from the distribution of the tones themselves over varying syllable types.

In the rest of this chapter, the tones of Suratthani are linked with a description of their realizations in monosyllables uttered in isolation. To demonstrate the tonetic variants clearly, I have adapted Professor Y.R.

Chao's Tone-letter system which he applied to Mandarin tones (1948). The vertical line gives a basis of reference for a speaker's pitch range which is divided into two equal parts, thus making three points: (1) high, (2) mid, and (3) low. The slanting and horizontal lines at the left of the vertical one show the general direction of the pitch contours of the tones. The tones themselves are indicated by raised Arabic numerals.

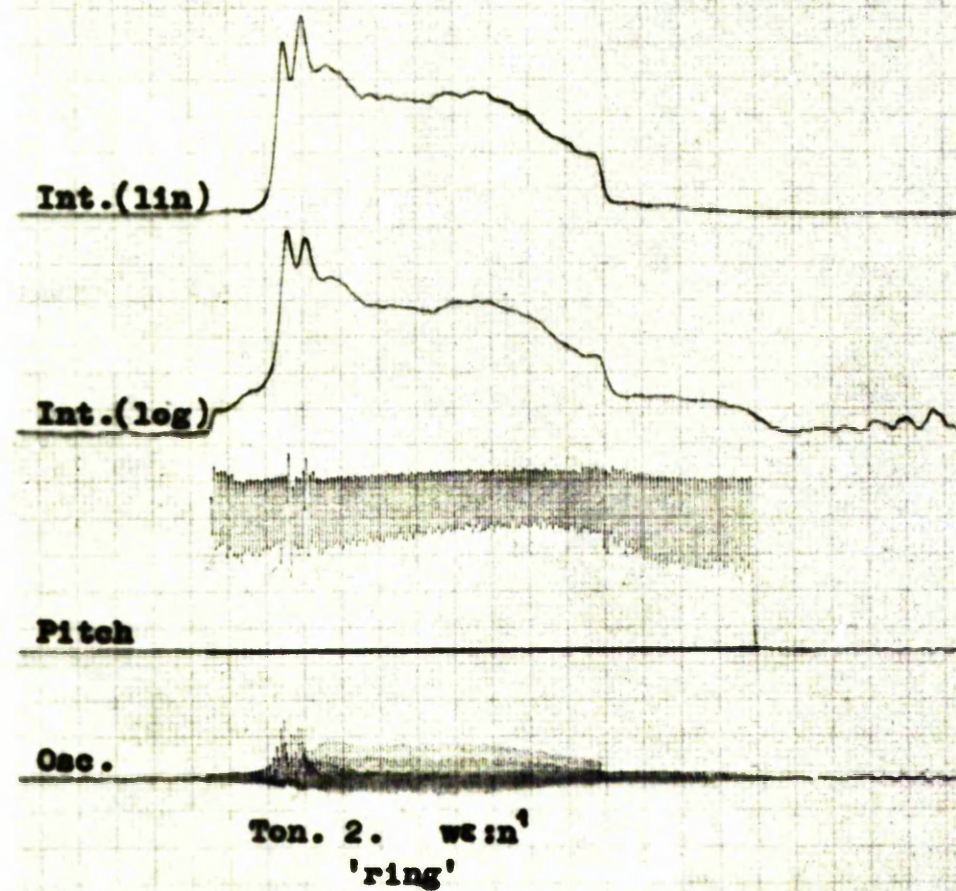
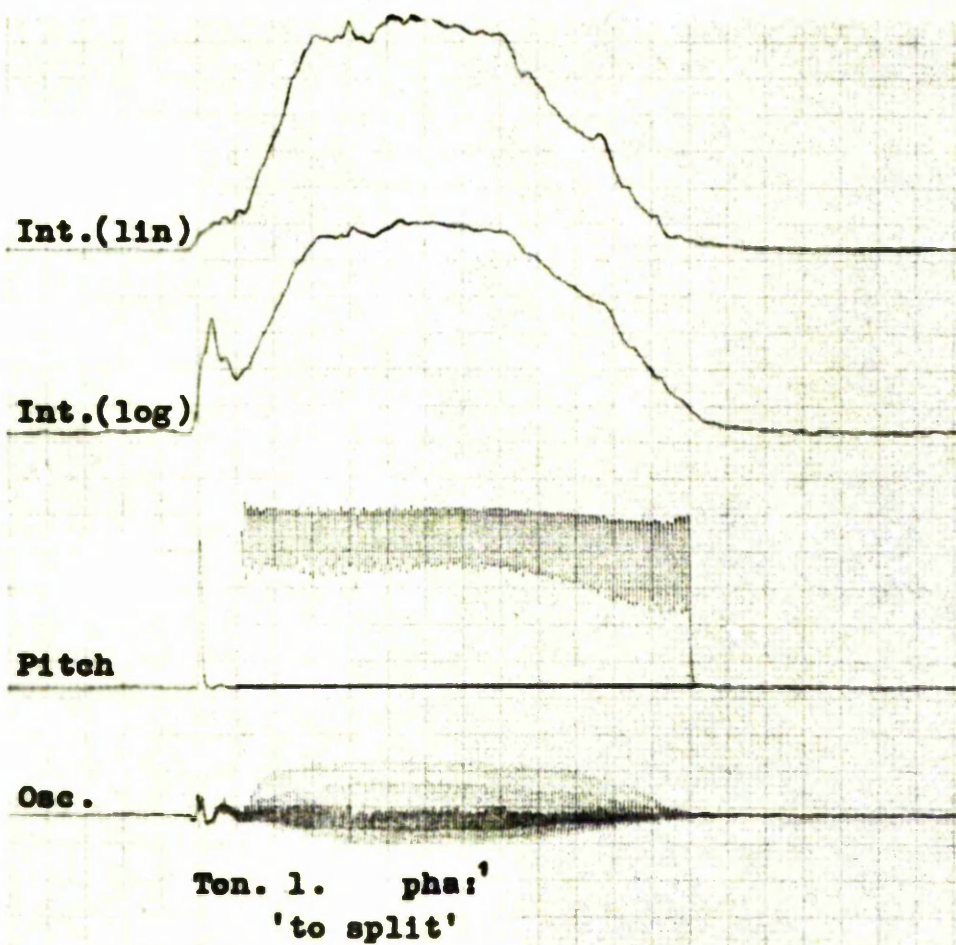
There are seven tones occurring with monosyllables in the Suratthani dialect. These tones were measured in monosyllabic utterances on the Frøkjær-Jensen pitch meter, and are illustrated in Tonograms. It is convenient in describing the realization of the tones to use such terms as 'high', 'mid' and 'low' pitch as reference points. In my pronunciation, 'high pitch' is associated in isolated utterances with frequencies around 225 to 250 Hertz (abbreviation Hz.), 'mid pitch' with frequencies around 180 to 200 Hz., and 'low pitch' with frequencies around 150 to 160 Hz.

The seven tones as uttered in isolation may be described as follows:-

1. Tone 1, high falling - - the pitch starts from the lower point of the high range, then rises a little higher than the starting point and falls to mid, [↘] (see Tons. 1 and 2 on page 43).

Examples:

| | |
|----------------------|---------------------|
| /pha: ¹ / | 'to split' (Ton. 1) |
| /ni: ¹ / | 'to escape' |
| /che: ¹ / | 'to disclose' |
| /ha: ¹ / | 'to seek' |
| /lɔ: ¹ / | 'handsome' |
| /we:n ¹ / | 'ring' (Ton. 2) |

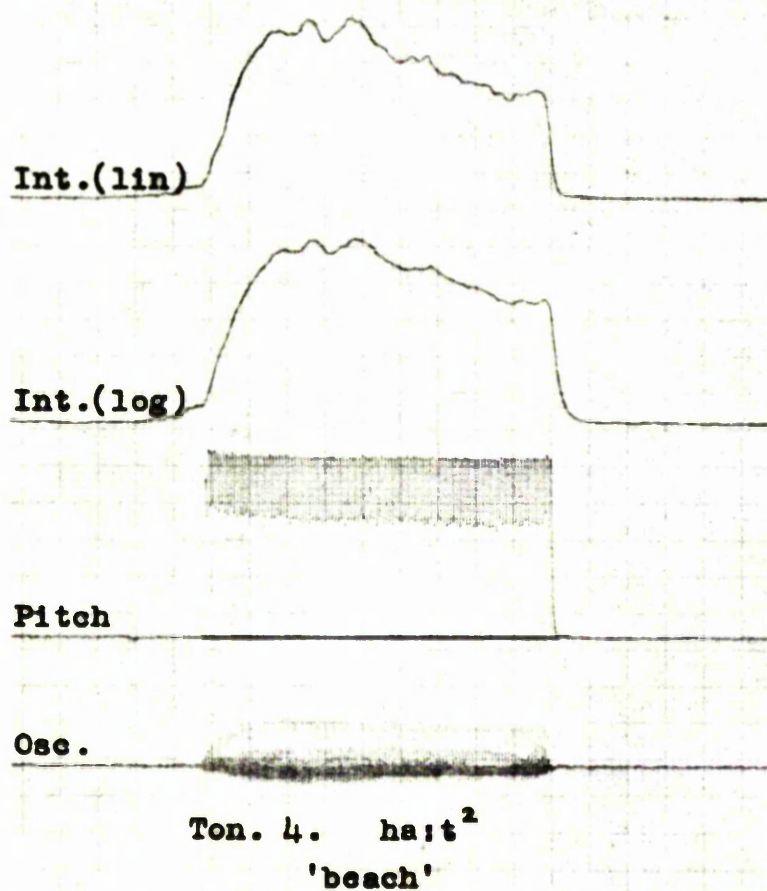
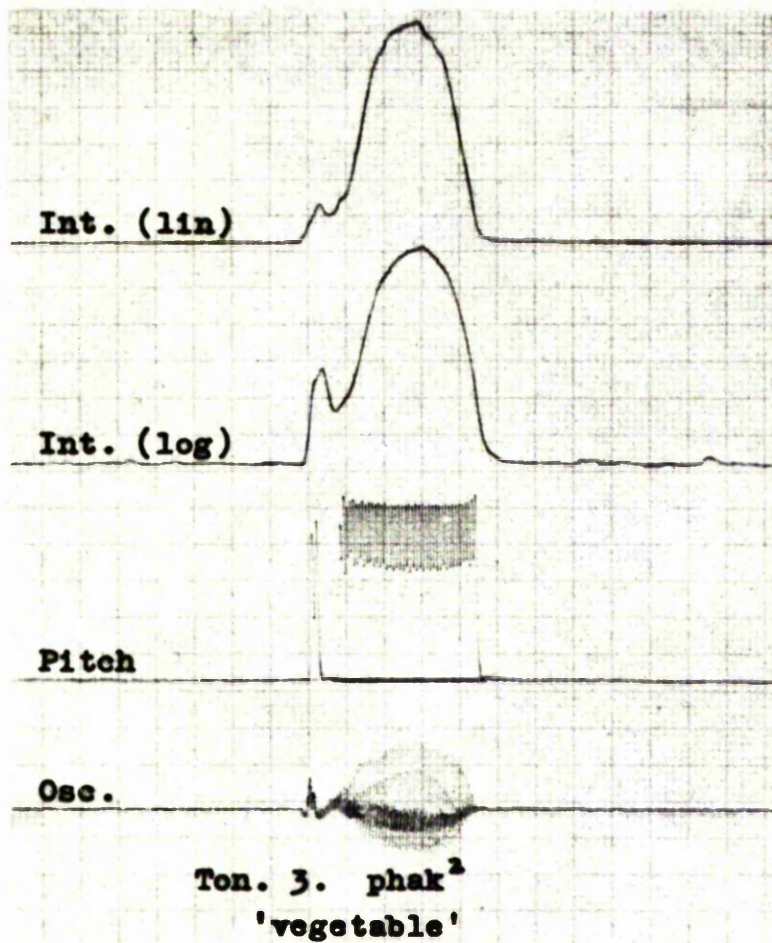


2. Tone 2, high level - - the pitch is approximately the same as the starting pitch of Tone 1, and is maintained to the end of the syllable, [—], (see Tons. 3 and 4 on page 45).

Examples:

| | |
|-----------------------|----------------------|
| /phak ² / | 'vegetable' (Ton. 3) |
| /ni:p ² / | 'to nip' |
| /che:k ² / | 'indented' |
| /ha:t ² / | 'beach' (Ton. 4) |
| /lɔ:k ² / | 'to deceive' |
| /jik ² / | 'to pinch' |

3. Tone 3, rising-falling - - the pitch starts from lower point of the mid range then rises to the higher point of the mid range and falls again to low, [↘], (see Tons. 5 and 6 on page 46). The 'swell' from a lower to a higher pitch and back again is characteristic of this tone, and is more marked in syllables beginning with unaspirated plosives [↘], (see Ton. 5). Though very slight, the tonetic variation between the realization of this tone in syllables beginning with an unaspirated plosive as compared with other syllables is clearly perceptible to the ear. The decision to allocate the same tone to both types of syllable despite the difference in pitch contour is thus an exception to the principle stated on page 41, that segmental phoneme classes are not taken into account in establishing the tones.



Int. (lin)

Int. (log)

Pitch

Osc.

Ton. 5. pa:³
'forest'

Int. (lin)

Int. (log)

Pitch

Osc.

Ton. 6. pha:³
'to bring'

50 Hz. 

Examples:

| | |
|----------------------|---|
| /pa: ³ / | 'forest' (Ton. 5) |
| /pha: ³ / | 'to bring' (Ton. 6) |
| /ma: ³ / | 'to come' |
| /kɛ: ³ / | 'old' |
| /ʔa: ³ / | 'father's younger brother or sister' |
| /cɔ: ³ / | 'to book' |

4. Tone 4, low level - - the pitch starts from mid and falls slightly to lower mid, then remains fairly constant for the duration of the syllable, [┘], (see Tons. 7 and 8 on page 48). It is 'level' relatively speaking to the lower falling tone (Tone 5). The fall in pitch in Tone 5 is steeper and more marked (see below).

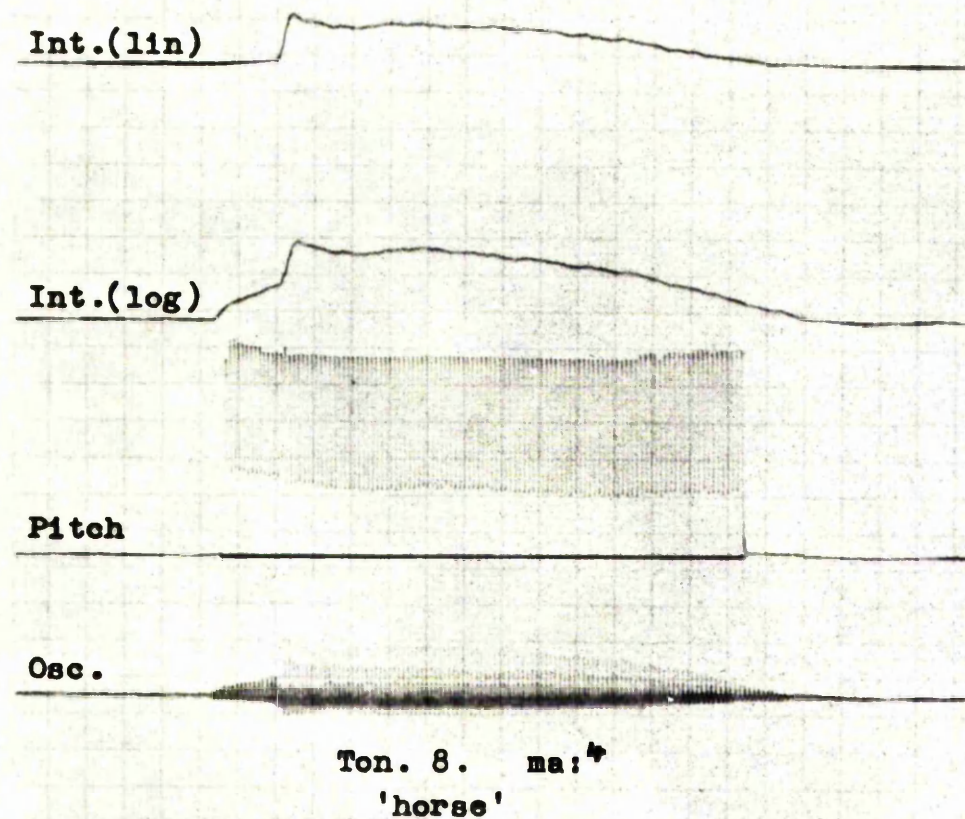
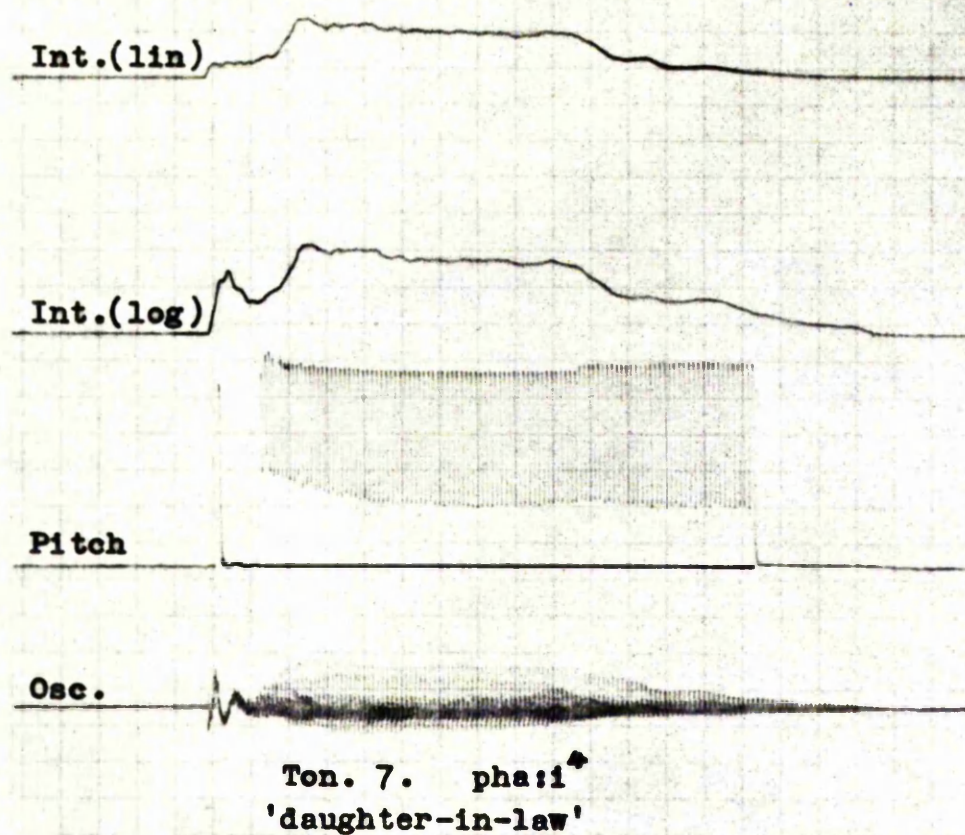
Examples:

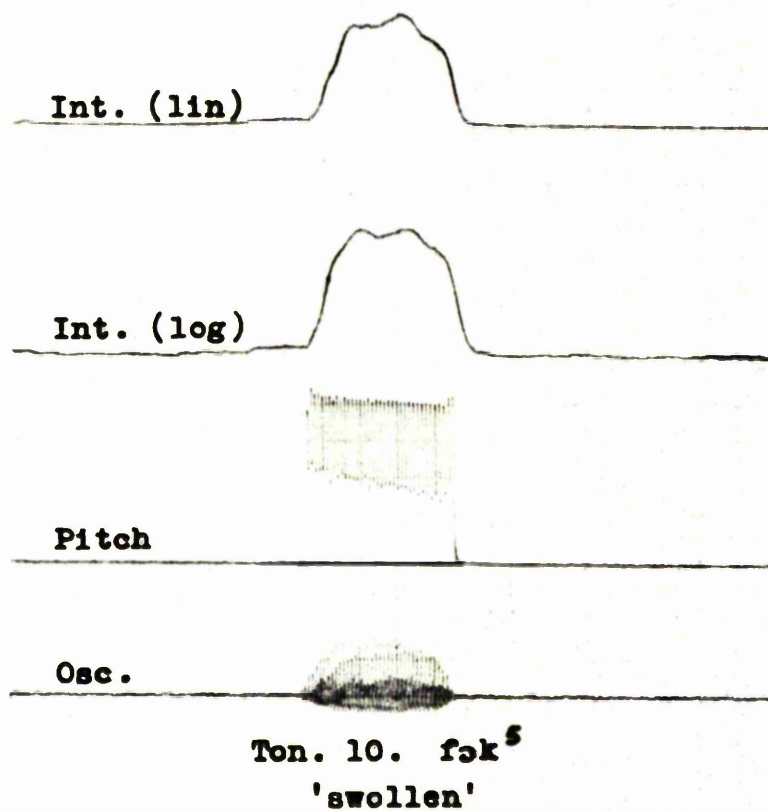
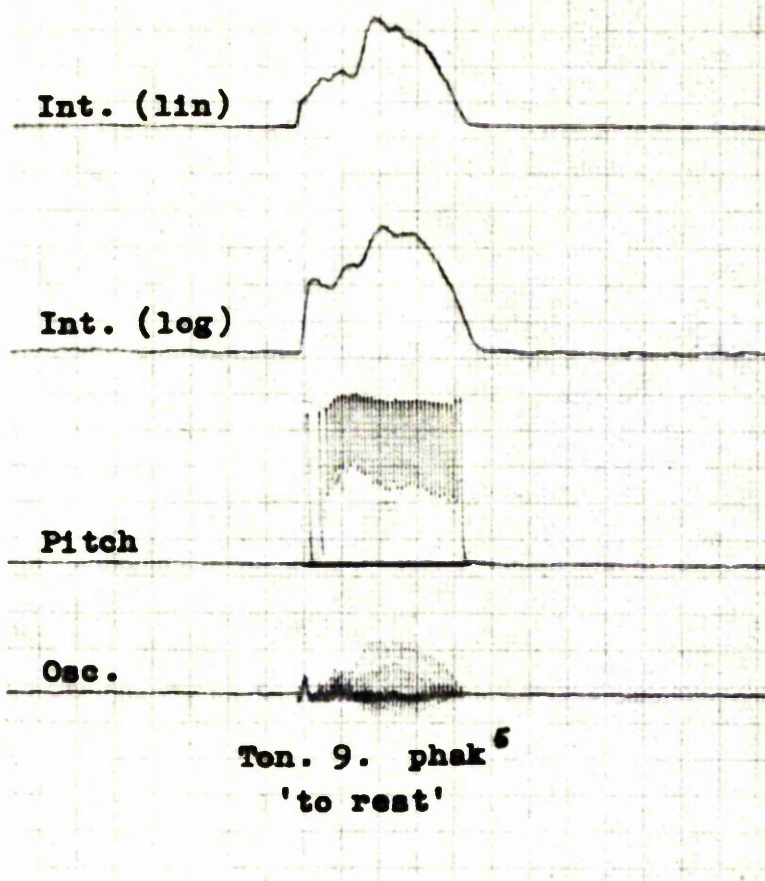
| | |
|-----------------------|----------------------------|
| /pha:i ⁴ / | 'daughter-in-law' (Ton. 7) |
| /ma: ⁴ / | 'horse' (Ton. 8) |
| /cha: ⁴ / | 'slow' |
| /fɔ: ⁴ / | 'to prosecute' |
| /jim ⁴ / | 'to smile' |
| /ru: ⁴ / | 'to know' |

5. Tone 5, lower falling - - the starting pitch is higher than the starting pitch of Tone 3, then falls fairly sharply to lower mid, [↘], (see Tons. 9 and 10 on page 49).

Examples:

| | |
|----------------------|--------------------|
| /phak ⁵ / | 'to rest' (Ton. 9) |
|----------------------|--------------------|





| | |
|----------------------|---------------------|
| /mat ⁵ / | 'to tie' |
| /chat ⁵ / | 'clear' |
| /fɔk ⁵ / | 'swollen' (Ton. 10) |
| /jik ⁵ / | 'to chase' |
| /ruk ⁵ / | 'to oppress' |

6. Tone 6, mid level - - the pitch is a little higher than the starting pitch of Tone 3, and remains fairly constant for the duration of the syllable, [—], (see Tons. 11 and 12 on page 51).

Examples:


| | |
|----------------------|------------------------|
| /pa: ⁶ / | 'aunt' |
| /pha: ⁶ / | 'cloth' (Ton. 11) |
| /kɛ: ⁶ / | 'to correct' (Ton. 12) |
| /ʔa: ⁶ / | 'to open the mouth' |
| /chɔ: ⁶ / | 'to cheat' |
| /cɔ: ⁶ / | 'to stare' |

7. Tone 7, low rising - - the pitch starts low and rises to mid, [↗], (see Tons. 13 and 14 on page 52).


Examples:

| | |
|-----------------------|----------------------|
| /pa:k ⁷ / | 'mouth' (Ton. 13) |
| /pha:k ⁷ / | 'region' |
| /wɛ:n ⁷ / | 'spectacles' |
| /ʔa:p ⁷ / | 'to bathe' (Ton. 14) |
| /chɔ: ⁷ / | 'bunch' |
| /cɔ:p ⁷ / | 'hoe' |

Int.(lin)



Int.(log)



Pitch




Osc.




Ton. 11. pha:⁶
'cloth'

Int.(lin)



Int.(log)



Pitch



Osc.



Ton. 12. kg:⁶
'to correct'

Int.(lin)

Int.(log)

Pitch

Osc.

Ton. 13. pa:k⁷
'mouth'

Int.(lin)

Int.(log)

Pitch

Osc.

Ton. 14. 2a:p⁷
'to bathe'

50 Hz. 

CHAPTER 5

THE TONAL SYSTEM-II: The Pitch Behaviour of
Two Syllable Sequences.

Having examined the pitch behaviour of monosyllables uttered in isolation, it was desired to see whether the realization of the tones varied in longer utterances. For the purposes of this thesis it was only feasible to study in detail the pitch behaviour of two syllable utterances.

Variation in Syllable Duration

It was regularly found that the second syllable of such utterances, i.e. the one before the pause, was of relatively greater duration than the first, and more consistently showed the same kind of tonetic realization as occurs in monosyllables. This is shown particularly clearly in Ton. 15 (on page 54) which is of an utterance in which both syllables have the same lexical tone.

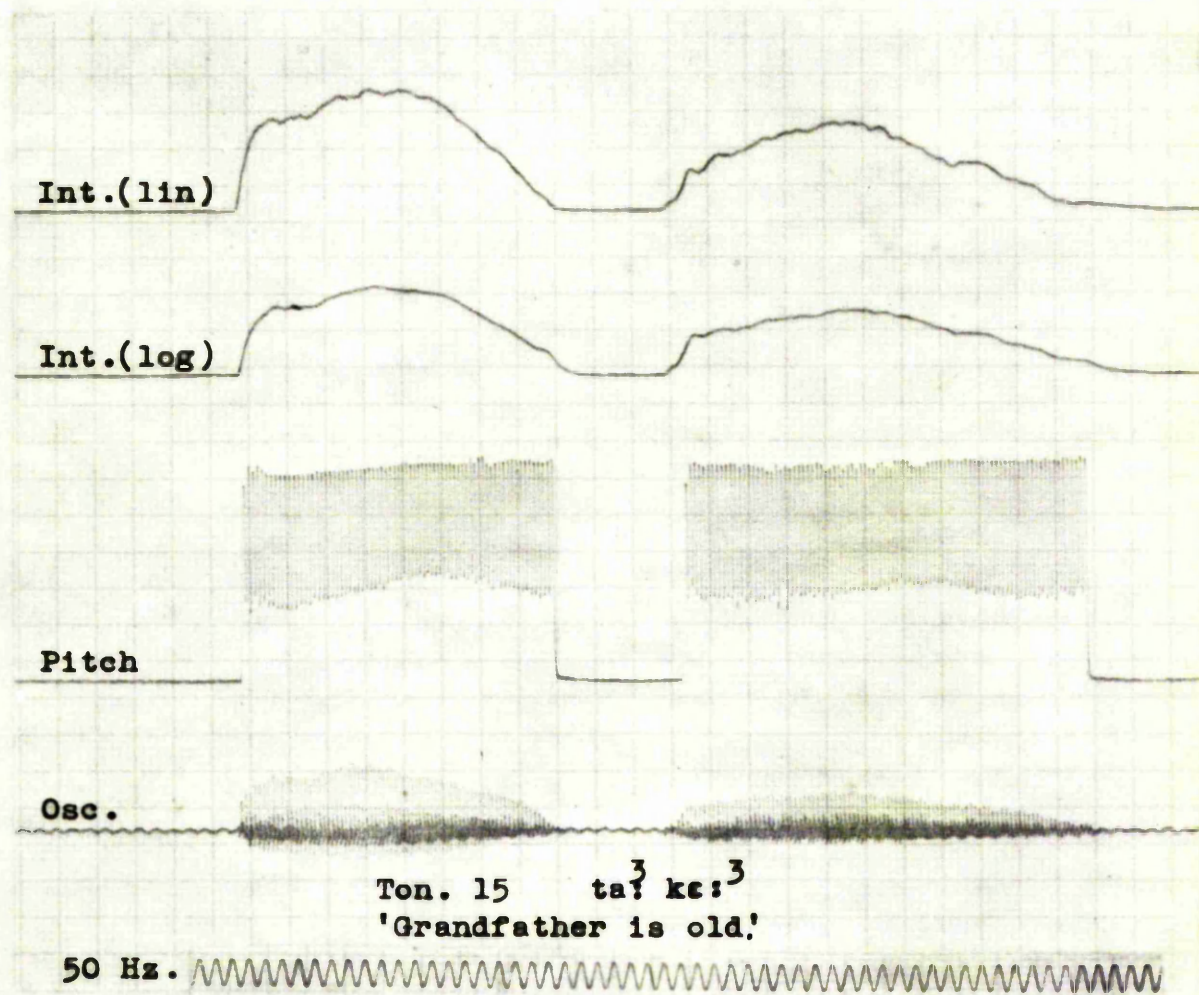
c/f Ton. 15 /ta:³ ke:³/ 'Grandfather is old.'

Compare also Ton. 16a and 16b on page 55 which show a sequence of the two monosyllable nouns /bɔ:³/ 'pond' and /pla:³/ 'fish' uttered in isolations with Ton. 17 which shows the compound noun /bɔ:³ pla:³/ 'fish-pond'.

Tonetic Variants of Tones 1 and 3

It was also found that there are two distinct tonetic variants for Tones 1 and 3 when they occupy the first place of a two syllable sequence.

Examination of the circumstances determining the choice of variant in each case suggests that it is a matter of whether the utterance is a compound (a compound



Int.

Int.

P.

O.

Ton. 16a ba:³
'pond'

Ton. 16b pla:³
'fish'

Int. (lin)

Int. (log)

Pitch

Osc.

Ton. 17 ba:³ pla:³
'fish-pond'

50 Hz.

noun in all the instances examined) or a phrase with two constituents.

In the compounding variant of Tone 1, the pitch may fall immediately from high to either mid or low [↘, ↘] (see Tons. 19 and 20 on page 57) relatively to the following tone, without the initial rise noted in monosyllables [↗] (see Ton. 18, and Tons. 1 and 2 on page 43).

Compare the contour of Ton. 18 /fa:¹/ [↗] 'lid' with that of the first element in Tons. 19 and 20 /fa:¹ khro:k⁵/ [↘ ↘] 'mortar-lid' and /fa:¹ fe:t²/ [↘ ↗] 'twin'.

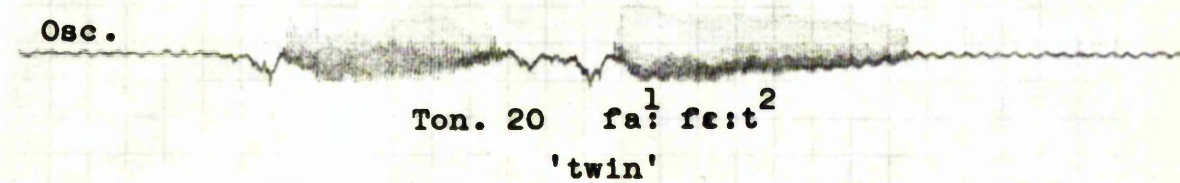
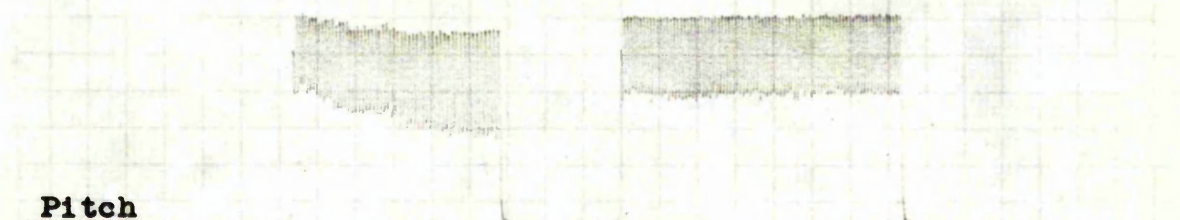
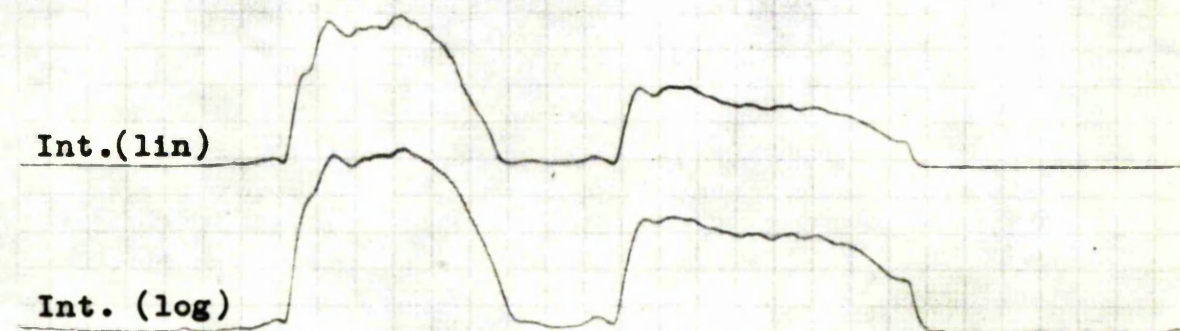
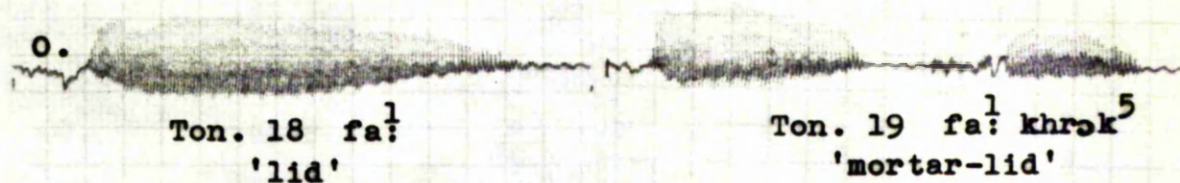
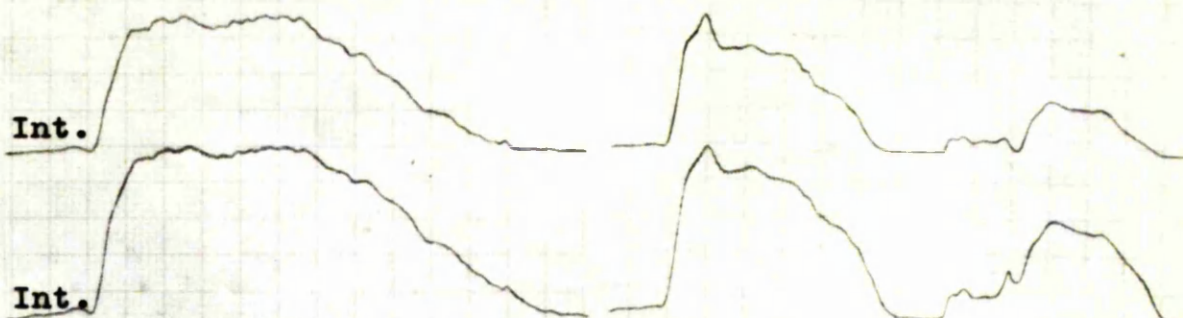
Other examples noted where the compounding variant is found are:-

/phi:¹ sw:ə⁶/ 'butterfly' a compound of /phi:¹/ 'ghost', and /sw:ə⁶/ 'blouse, coat' (See Ton. 21 on page 58.)

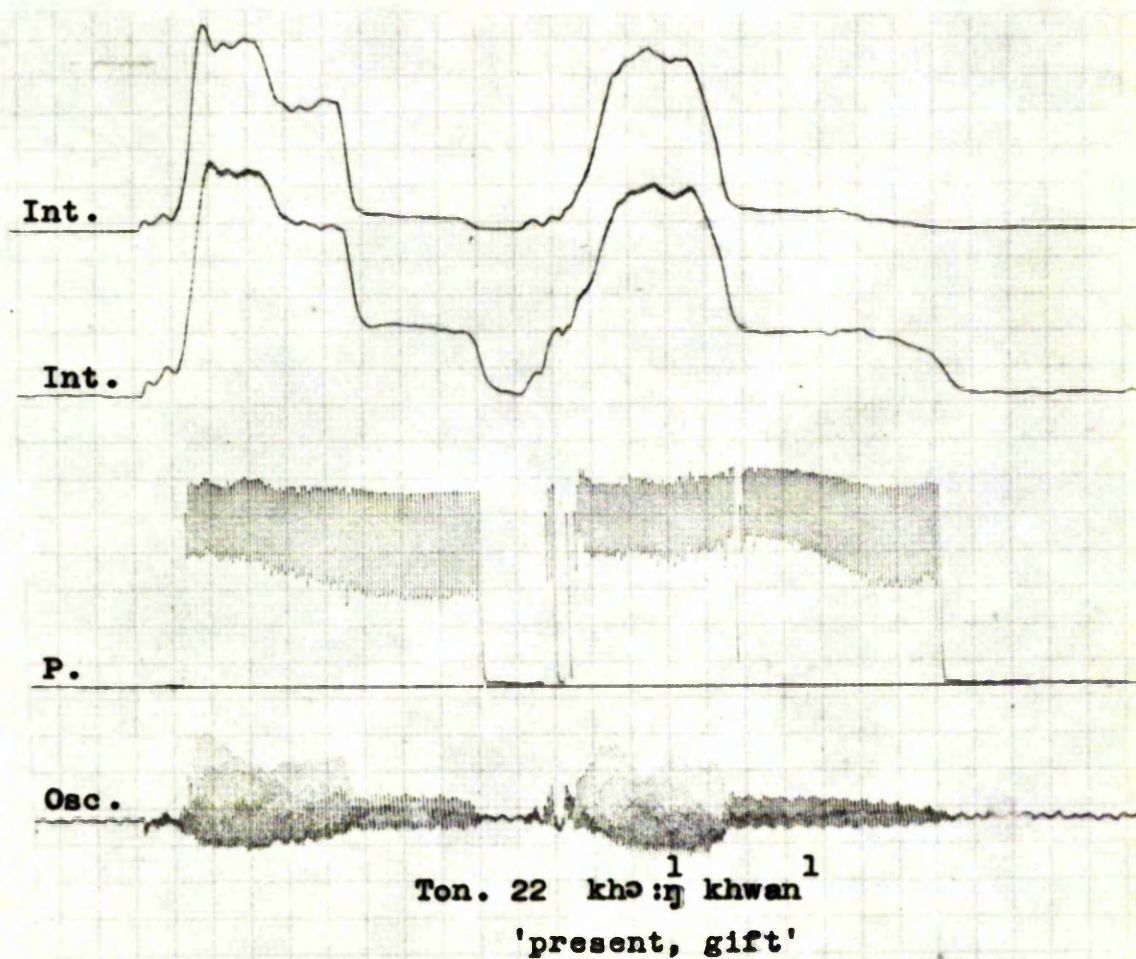
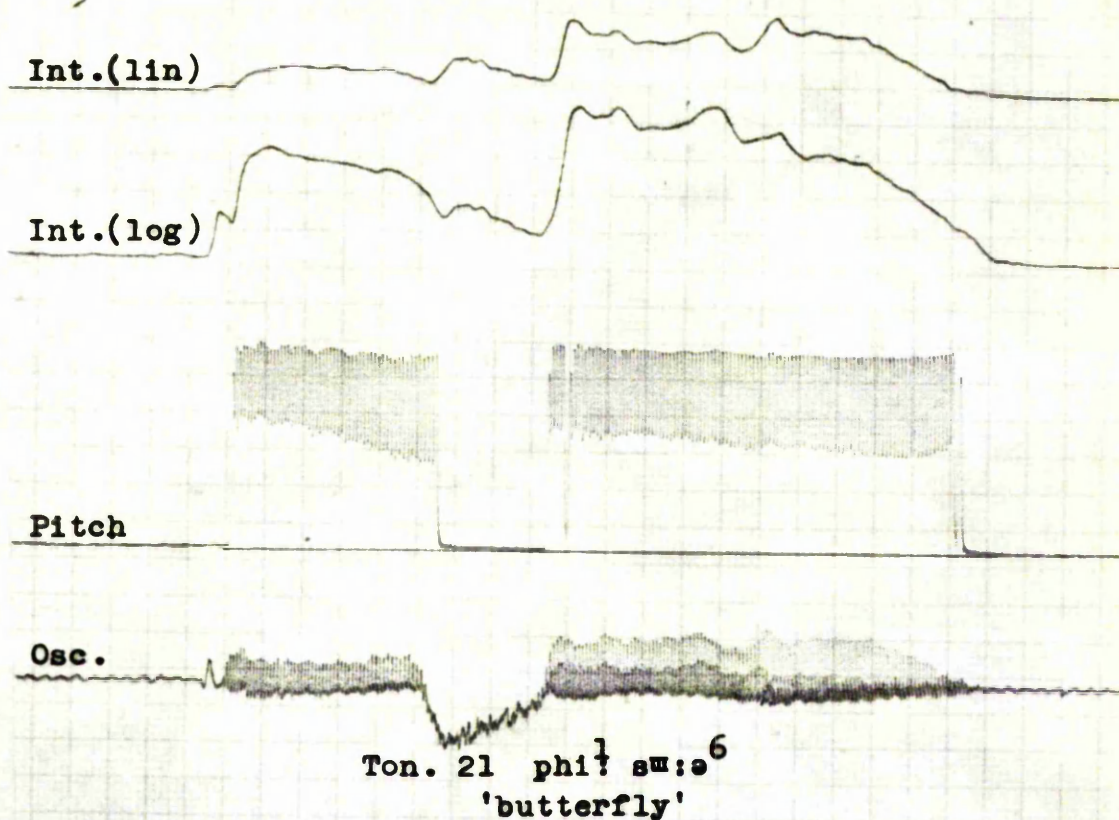
/khɔ:ŋ¹ khwan¹/ 'present, gift' a compound of /khɔ:ŋ¹/ 'thing', and /khwan¹/ 'one's spirit' (See Ton. 22 on page 58.)

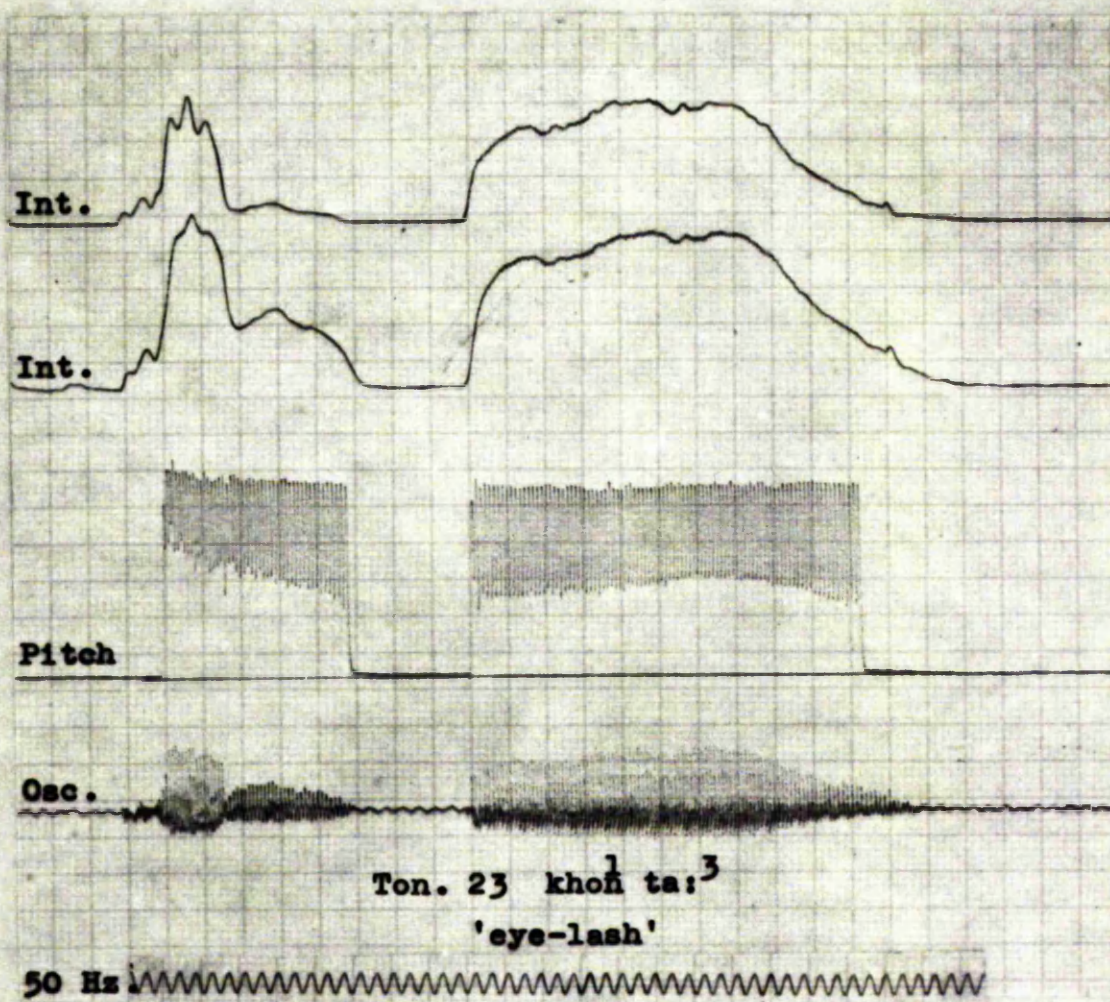
/khon¹ ta:³/ 'eye-lash' a compound of /khon¹/ 'hair', and /ta:³/ 'eye' (See Ton. 23 on page 59.)

In the compounding variant of Tone 3, the pitch may fall from mid to low without the 'swell' in pitch characteristic of this tone in monosyllables. The fall in pitch may be relatively slow [↘], or relatively rapid [↘]. This tonetic variant of Tone 3 has already been illustrated in Ton. 17 'fish-pond' on page 55 where the contour of the first syllable can be compared with that of /bɔ:³/ 'pond' in Ton. 16a.



50 Hz.





Compound Nouns and Phrases Compared

Compare the Tonograms of the following pairs of utterances in which the first of each pair is a phrase or short sentence, and the second a compound noun made up of the same morphemes as the sentence. (For the sake of simplicity only one of the possible compounding variants of Tones 1 and 3 is shown in the tone sticks of subsequent examples. For Tone 3 the rapid fall [↘] is shown, except where an accompanying Tonogram clearly shows the slow-fall variant. For Tone 1, the high-to-mid variant [↘] is shown, except where an accompanying Tonogram shows the high-to-low variant.)

Examples:

| | | |
|------------------------|--|-------|
| 1a. The fish is salty. | /pla: ³ khem ³ / | [↘ ↘] |
| 1b. Salt-fish. | /pla: ³ khem ³ / | [↘ ↘] |

(See Tons. 24a and 24b on page 61.)

| | | |
|---------------------|---------------------------------------|-------|
| 2a. The fish bites. | /pla: ³ kat ⁷ / | [↘ ↘] |
| 2b. Fighting-fish. | /pla: ³ kat ⁷ / | [↘ ↘] |

(See Tons. 25a and 25b on page 62.)

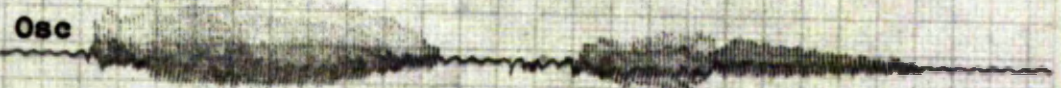
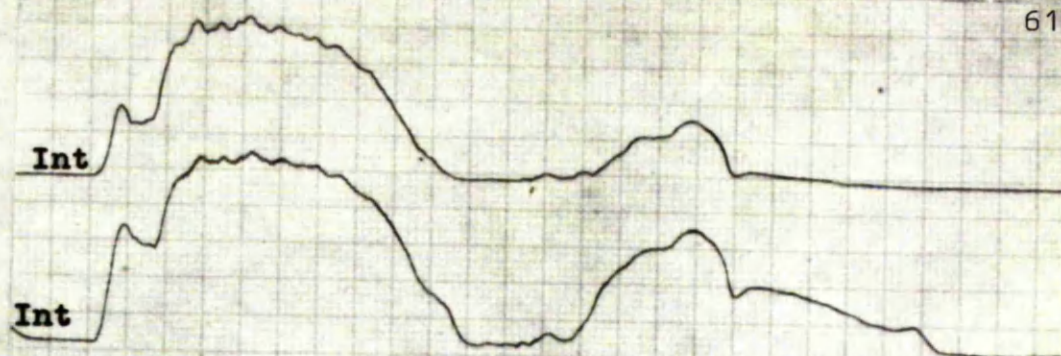
| | | |
|------------------------------|--|-------|
| 3a. The curry is less spicy. | /kɛ:ŋ ³ cɯ:t ⁷ / | [↘ ↘] |
| 3b. Soup. | /kɛ:ŋ ³ cɯ:t ⁷ / | [↘ ↘] |

(See Tons. 26a and 26b on page 63.)

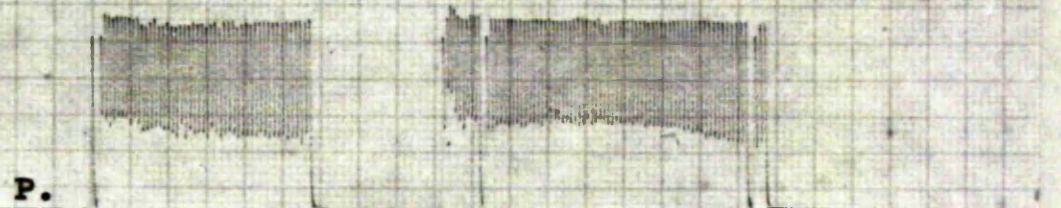
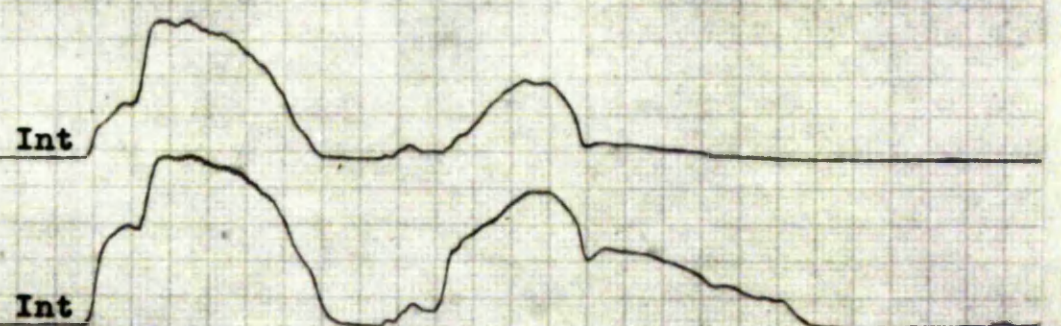
See also the tonetic variants of Tone 1 in the following examples:-

| | | |
|--------------------------|---------------------------------------|-------|
| 4a. The needle is short. | /khem ¹ san ⁶ / | [↘ ↘] |
| 4b. Minute-hand. | /khem ¹ san ⁶ / | [↘ ↘] |

(See Tons. 27a and 27b on page 64.)

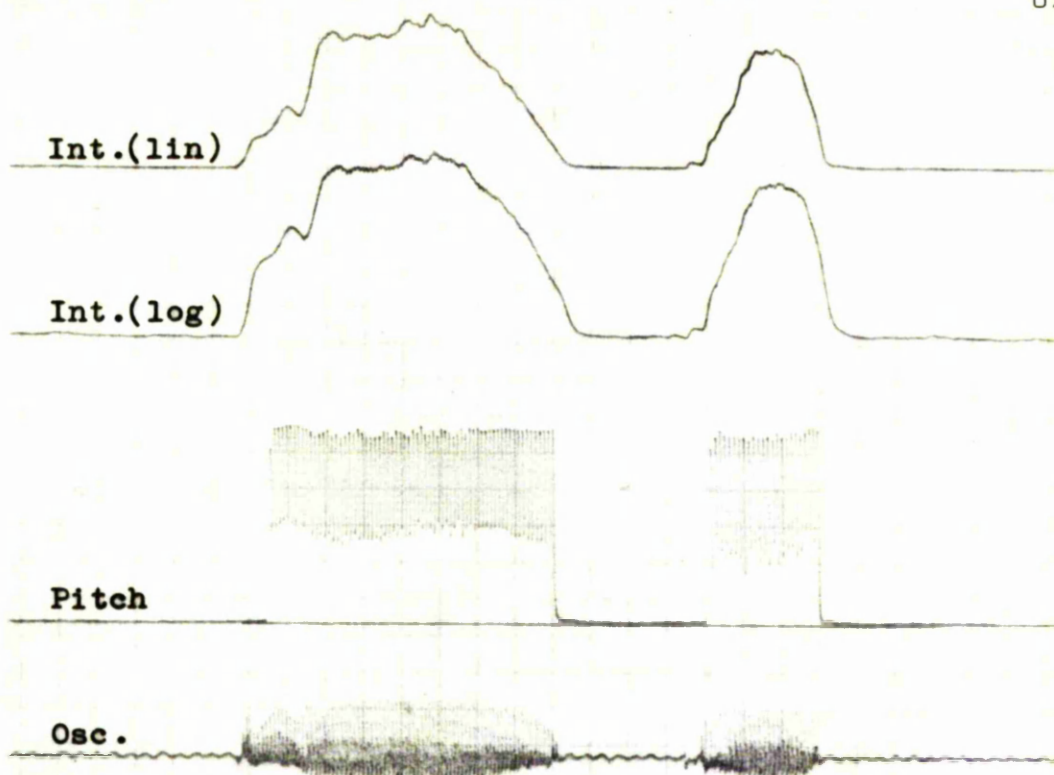


Ton. 24a pla³ khi³
'The fish is salty.'

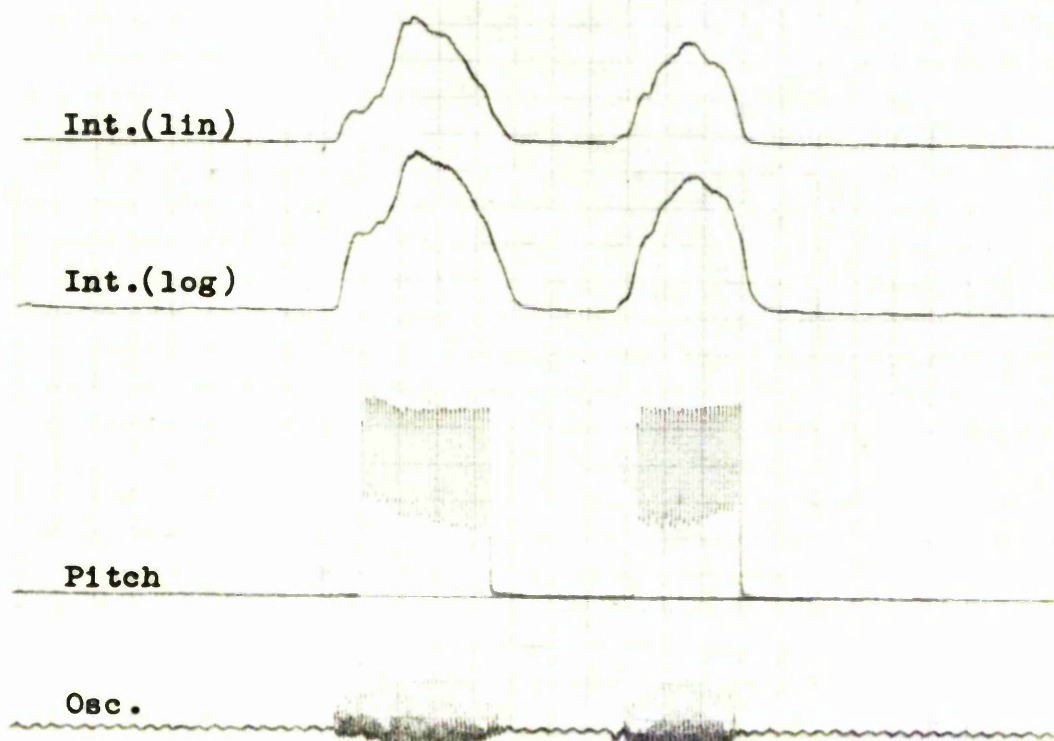


Ton. 24b pla³ khi³
'salt-fish'

50 Hz.




Ton. 25a pla³ kat⁷
'The fish bites.'




Ton. 25b pla³ kat⁷
'fighting-fish'

50 Hz.

Int.(lin)



Int.(log)



Pitch




Osc.

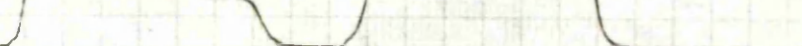


Ton. 26a ke:ŋ³ cm:t⁷
'The curry is less spicy.'

Int.(lin)



Int.(log)




Pitch



Osc.



Ton. 26b ke:ŋ³ cm:t⁷
'soup'

50 Hz. 

Int.

Int.

Pitch

Osc.

Ton. 27a khem¹ san⁶
 'The needle is short.'

Int (lin)

Int (log)

Pitch

Osc.

Ton. 27b khem¹ san⁶
 'minute hand'

50 Hz.

| | | |
|--------------------------|---|---------|
| 5a. The beans grow. | /thu:ə ¹ ɲɔ:k ⁷ / | [ʎ ʎ] |
| 5b. Bean-shoots. | /thu:ə ¹ ɲɔ:k ⁷ / | [ʎ ʎ] |
| 6a. The doctor examines. | /mɔ: ¹ du: ³ / | [ʎ ʎ] |
| 6b. Fortune-teller. | /mɔ: ¹ du: ³ / | [ʎ ʎ] |
| 7a. The needle is long. | /khem ¹ ja:u ³ / | [ʎ ʎ] |
| 7b. Hour-hand. | /khem ¹ ja:u ³ / | [ʎ ʎ] |

It was also found that certain noun expressions consisting of a noun and a qualifying adjective (or stative verb) also exhibit the compounding tonetic variant of the noun.

Compare for example:-

| | | |
|-----------------------|--|---------|
| 1a. The bear is thin. | /mi: ¹ phɔ:m ¹ / | [ʎ ʎ] |
| 1b. Thin bear. | /mi: ¹ phɔ:m ¹ / | [ʎ ʎ] |

(See Tons. 28a and 28b on page 66).

| | | |
|-----------------------|--------------------------------------|---------|
| 2a. The dog is crazy. | /ma: ¹ ba: ⁶ / | [ʎ ʎ] |
| 2b. Crazy dog. | /ma: ¹ ba: ⁶ / | [ʎ ʎ] |

| | | |
|-----------------------|--|---------|
| 3a. The hair is grey. | /phom ¹ ɲɔ:k ² / | [ʎ ʎ] |
| 3b. Grey hair. | /phom ¹ ɲɔ:k ² / | [ʎ ʎ] |

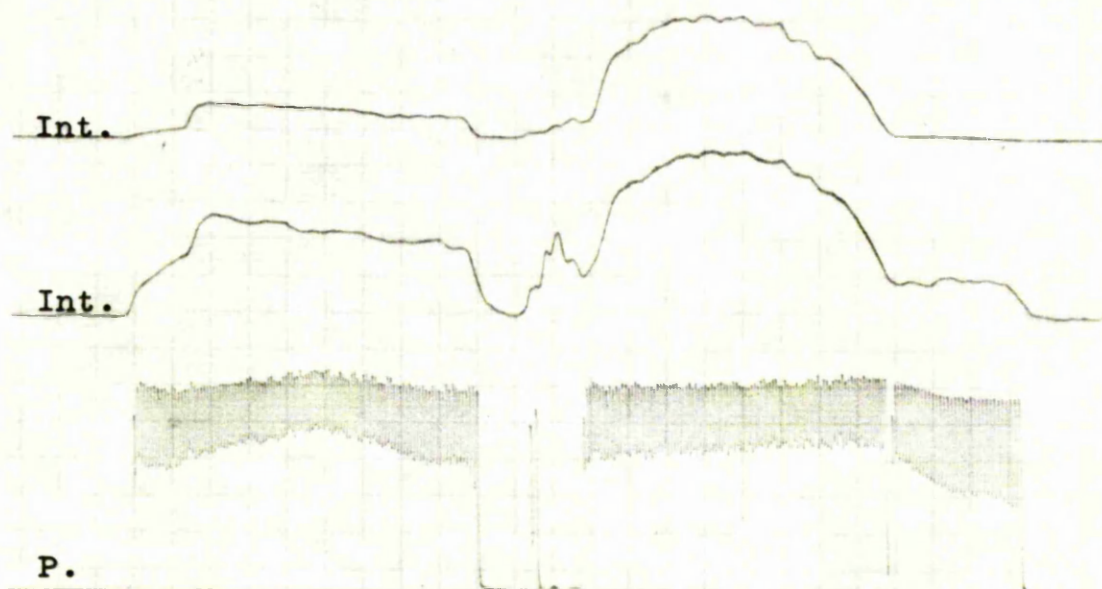
| | | |
|-------------------------|--------------------------------------|---------|
| 4a. Grandfather is old. | /ta: ³ ke: ³ / | [ʎ ʎ] |
| 4b. Old man. | /ta: ³ ke: ³ / | [ʎ ʎ] |

(See Tons 15 and 29 on pages 54 and 67).

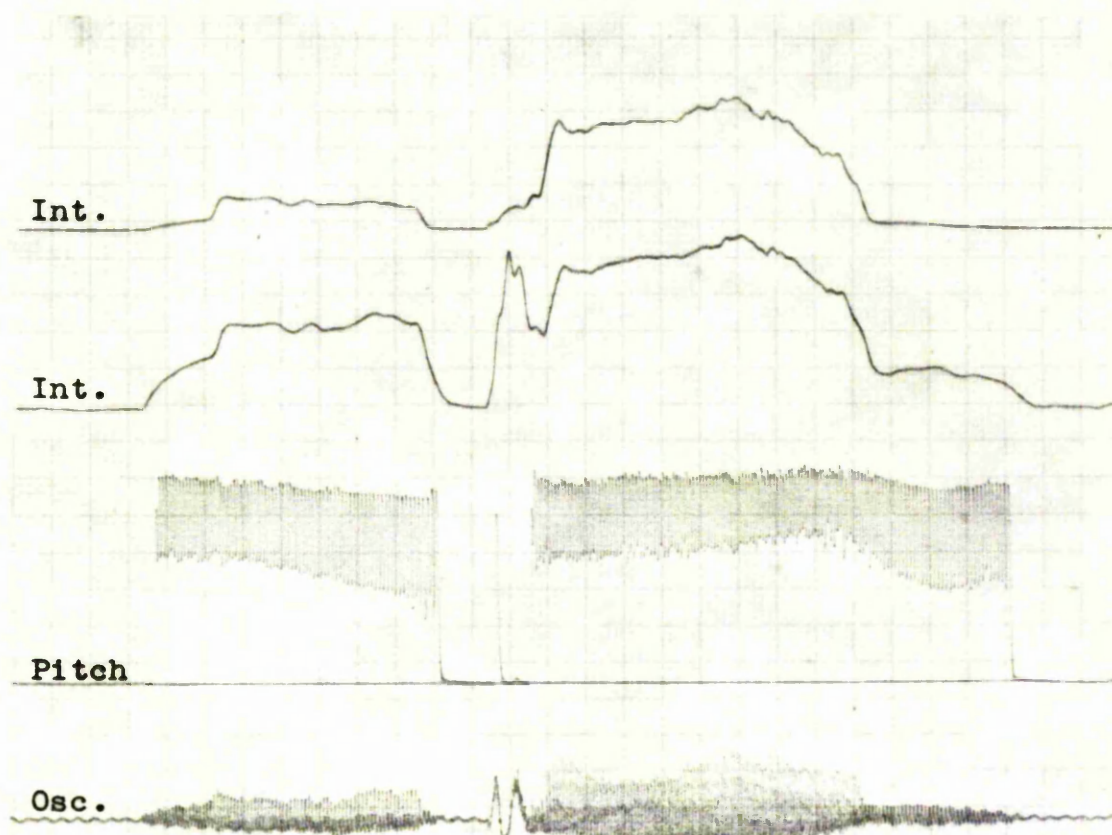
| | | |
|----------------------|---------------------------------------|---------|
| 5a. People are poor. | /khon ³ con ³ / | [ʎ ʎ] |
| 5b. Poor people. | /khon ³ con ³ / | [ʎ ʎ] |

(See Tons. 30a and 30b on page 68).

| | | |
|----------------------|--|---------|
| 6a. People are rich. | /khon ³ ruəi ³ / | [ʎ ʎ] |
| 6b. Rich people. | /khon ³ ruəi ³ / | [ʎ ʎ] |




Ton. 28a mi:¹ phə:m¹
 'The bear is thin!'



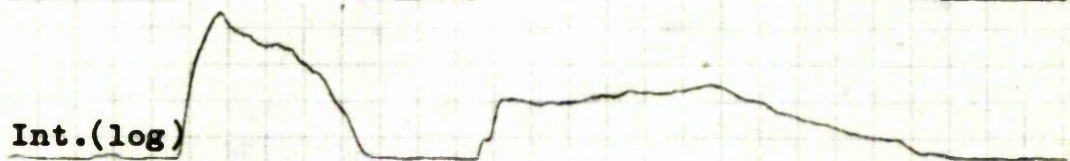
Ton. 28b mi:¹ phə:m¹
 'thin bear'

50 Hz.

Int.(lin)



Int.(log)



Pitch




Osc.



Ton. 29 ta:³ ke:³

'old man'

50 Hz. 

Int.(lin)

Int.(log)

Pitch

Osc.

Ton. 30b khon³ con³

'poor people'

Int.

Int.

Pitch

Osc.

Ton. 30a khon³ con³

'People are poor.'

50 Hz.

| | | |
|------------------------|---------------------------------------|---------|
| 7a. People are crazy. | /khon ³ ba: ⁶ / | [˩ ˨] |
| 7b. Crazy people. | /khon ³ ba: ⁶ / | [˩ ˨] |
| 8a. The milk is fresh. | /nom ³ sɔt ² / | [˩ ˧] |
| 8b. Fresh milk. | /nom ³ sɔt ² / | [˩ ˧] |
| 9a. The milk is thick. | /nom ³ khon ⁶ / | [˩ ˨] |
| 9b. Condensed milk. | /nom ³ khon ⁶ / | [˩ ˨] |

It appears, therefore, that the use of this particular tonetic variant has the effect of welding together two words to form a noun phrase \widehat{NV} , as contrasted with a two-constituent sentence $N+V$. Alternatively we could take the view that in the Suratthani dialect such expressions as 'thin bear', 'crazy dog', etc. should be regarded as compound nouns. However, from the brief examination I have made of longer utterances, the compounding variant of nouns with Tones 1 and 3 appears to be used in longer noun phrases also. Some of these appear clearly to be compound nouns; others such as 9, 12, and 23 below might appear to European linguists to be noun phrases rather than compound nouns. The tonetic treatment in the Suratthani dialect, however, suggests that from the Thai point of view all these forms should be classed together as of the same type, either as compound nouns or as noun phrases.

Examples:

- | | |
|--|---|
| 1. /si: ¹ khiəu ¹ fa: ⁴ / | 'sky-blue' (See Ton. 31 on page 70.) |
| [˩ ˩ ˩] | |
| 2. /khon ³ kha:i ¹ pla: ³ / | 'fish-monger' (See Ton. 32 on page 70.) |
| [˩ ˩ ˩] | |
| 3. /ro:ɯ ³ fai ³ fa: ⁴ / | 'power-house-station' (See Ton. 33 on page 71.) |
| [˩ ˩ ˩] | |
| 4. /pha: ⁶ khon ¹ sat ² / | 'woollen cloth' (See Ton. 34 on page 71.) |
| [˨ ˩ ˧] | |

Int.

Int.

Pitch

Osc.

Ton. 31 si:¹ khiəu¹ fa:⁴
 'sky-blue'

Int.

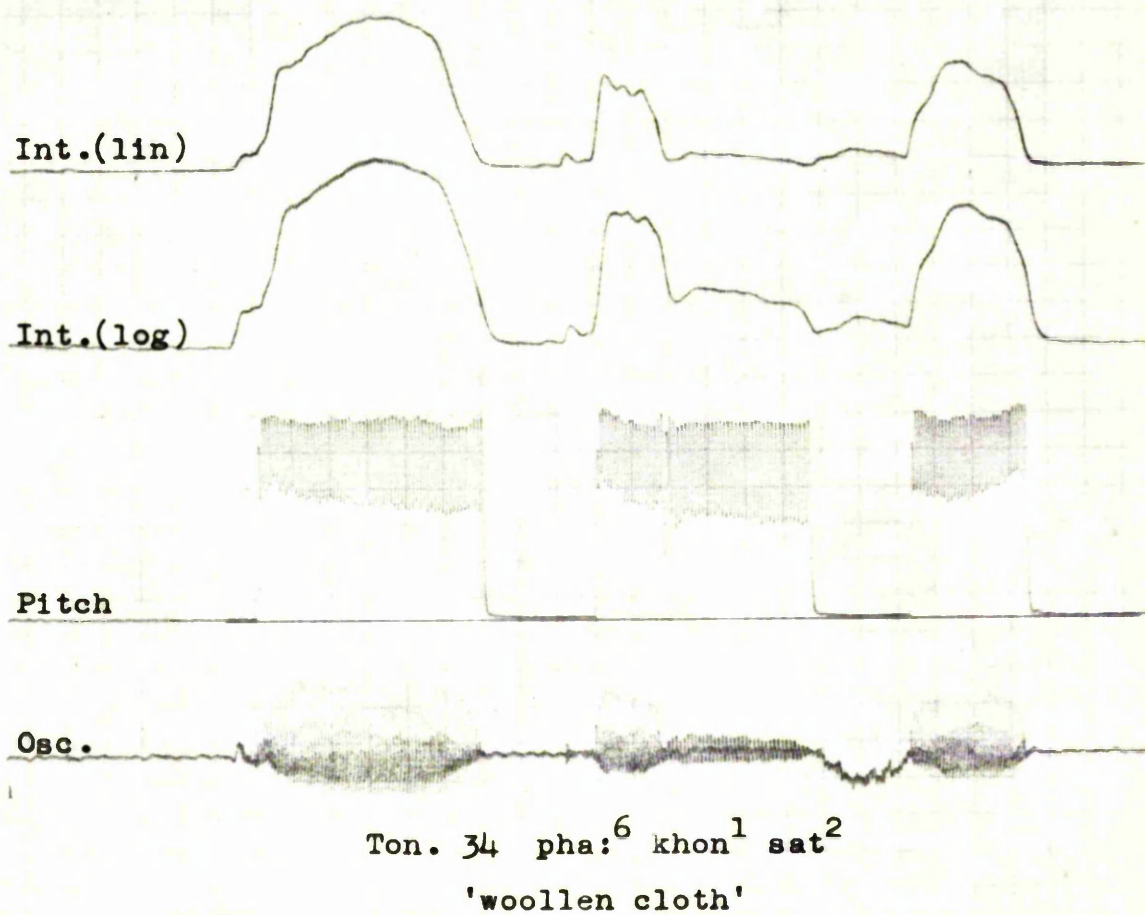
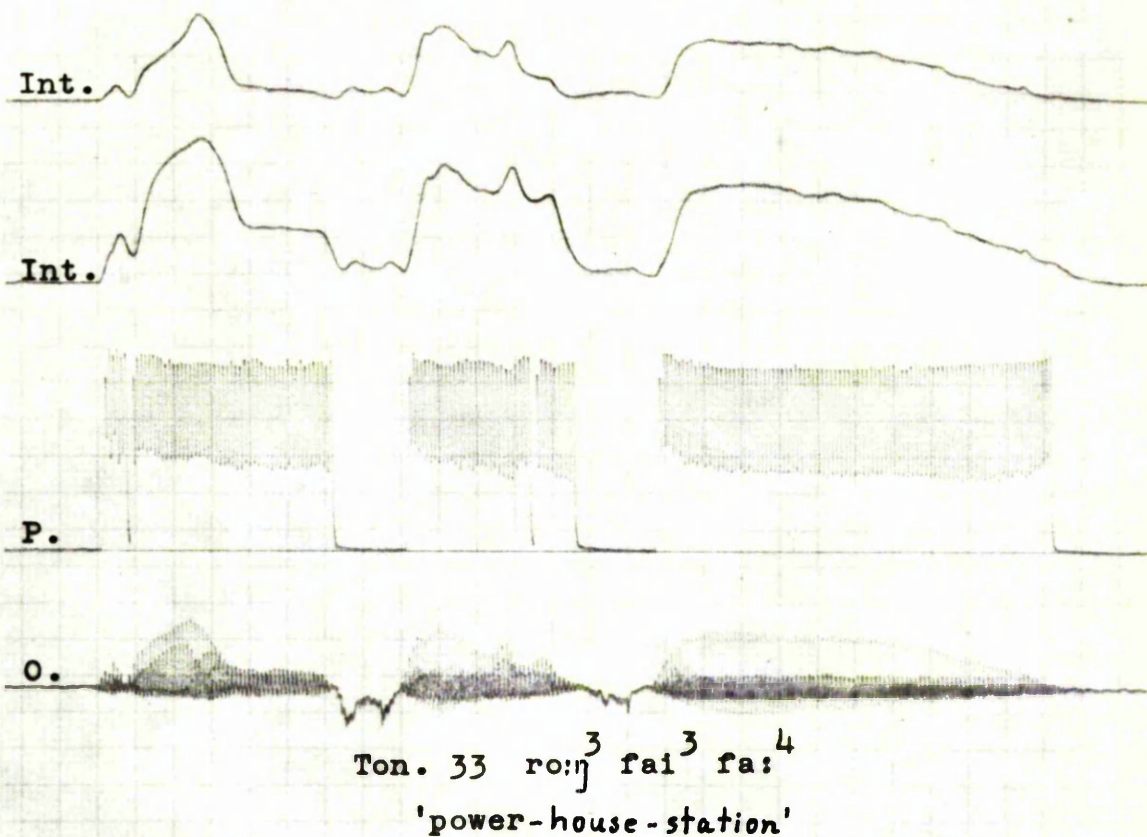
Int.

Pitch

Osc.

Ton. 32 khon³ kha:i¹ pla:³
 'fish-monger'

50 Hz.



50 Hz.

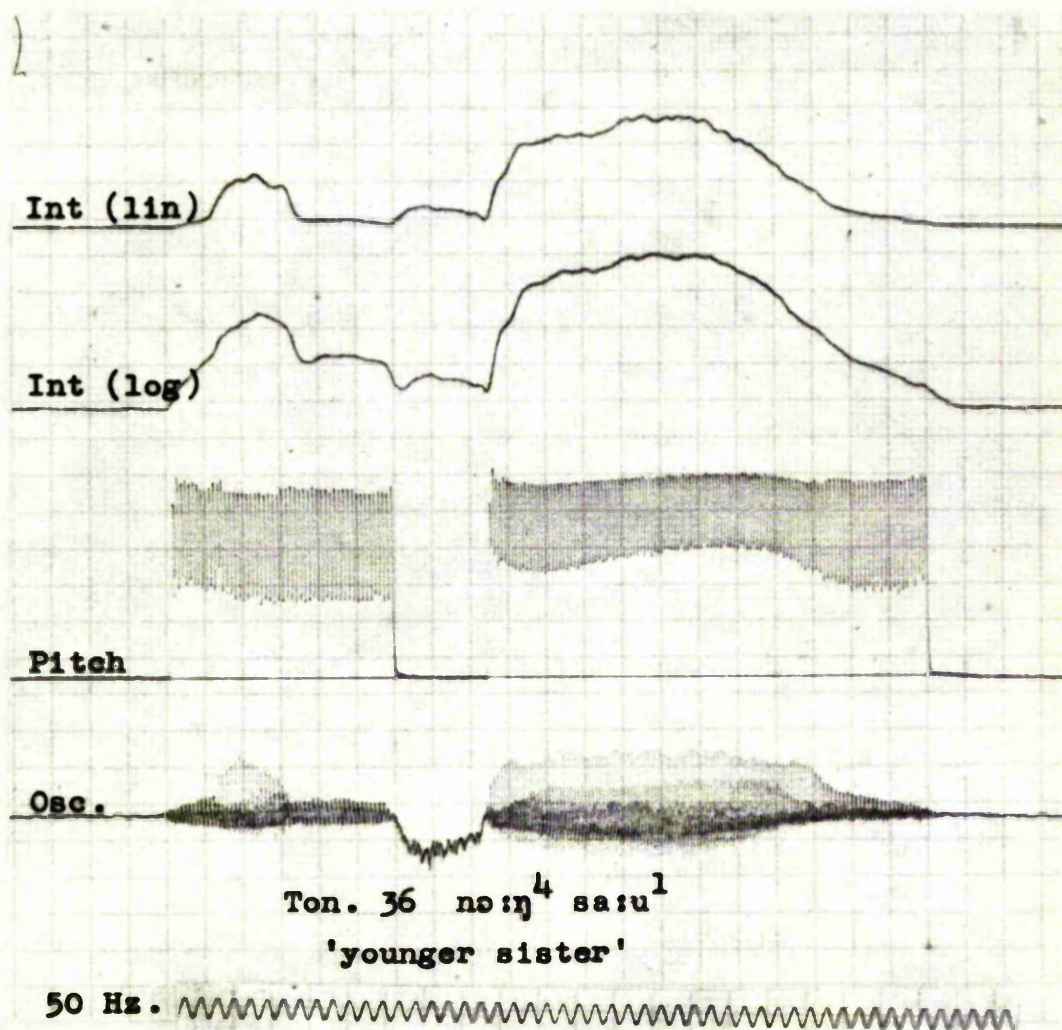
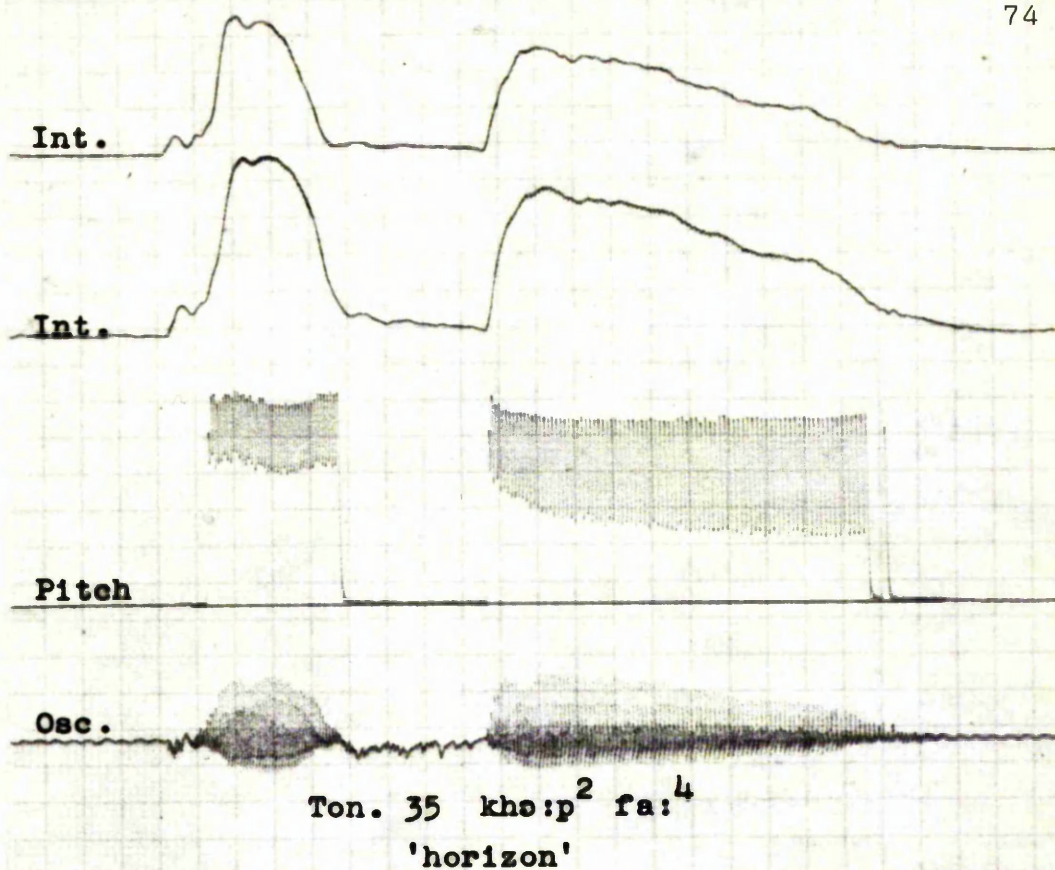
5. /thu:ə¹ fak² ja:u³/ 'cow pea'
[ㄅ ㄈ ㄐ]
6. /khai¹ pu:³ na:³/ 'field crab's eggs'
[ㄎ ㄆ ㄋ]
7. /khem¹ klat⁷ sw:ə⁶/ 'brooch'
[ㄎ ㄌ ㄙ]
8. /khɔ:ɣ¹ khwan¹ pi:³ mai¹/ 'New Year present'
[ㄎ ㄎ ㄆ ㄇ]
9. /ma:¹ ha:ɣ¹ du:ən⁶/ 'a docked tail dog'
[ㄇ ㄏ ㄊ]
10. /pla:³ lin⁴ ma:¹/ 'sole' (one kind of fish)
[ㄌ ㄌ ㄇ]
11. /ka:³ na:m⁴ rɔ:n⁴/ 'vacuum-flask'
[ㄎ ㄋ ㄣ]
12. /khon³ kha:¹ hak²/ 'a broken legged man'
[ㄎ ㄎ ㄏ]
13. /khon³ khɔ:¹ tha:n³/ 'beggar'
[ㄎ ㄎ ㄊ]
14. /khon³ ce:u³ rw:ə³/ 'oar-man'
[ㄎ ㄘ ㄹ]
15. /ɣɔn³ dw:ən³ khon³ ɣa:n³/ 'worker's salary'
[ㄎ ㄊ ㄎ ㄎ]
16. /rw:ə³ ha:¹ pla:³/ 'fishing-boat'
[ㄎ ㄏ ㄌ]
17. /ra:u³ ta:k⁷ pha:⁶/ 'clothes-line'
[ㄎ ㄌ ㄌ]

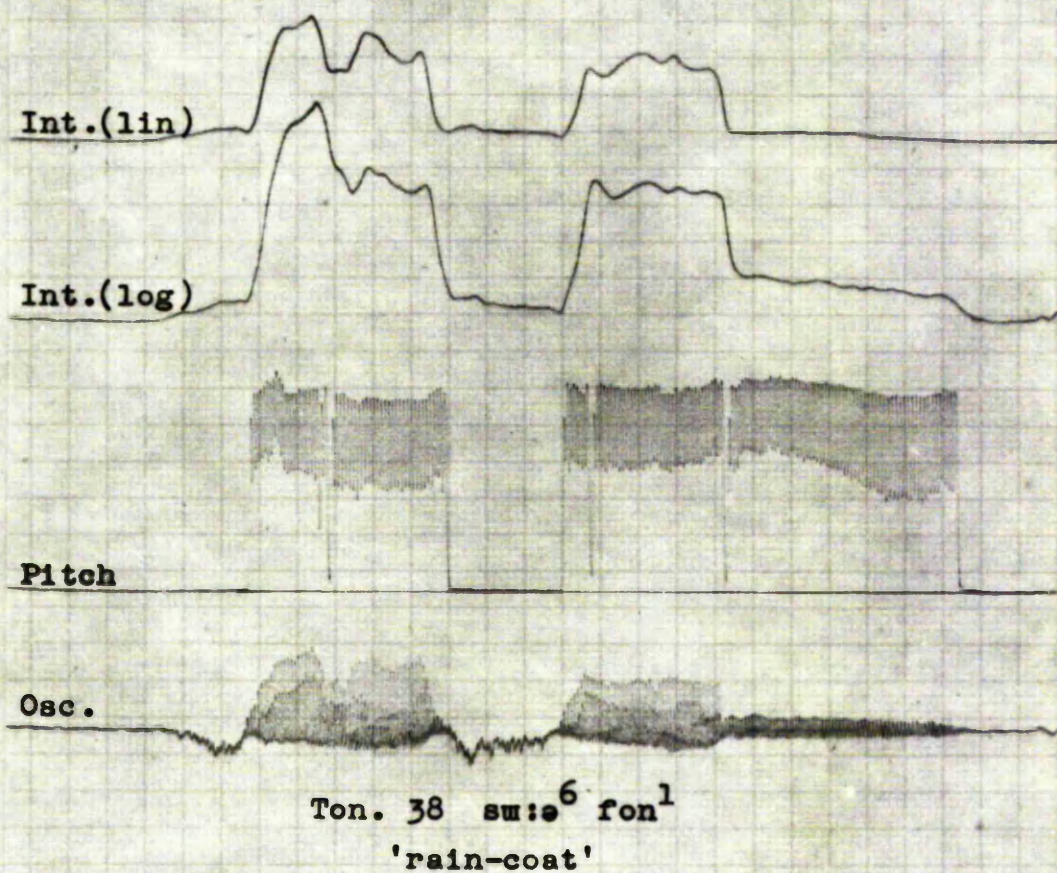
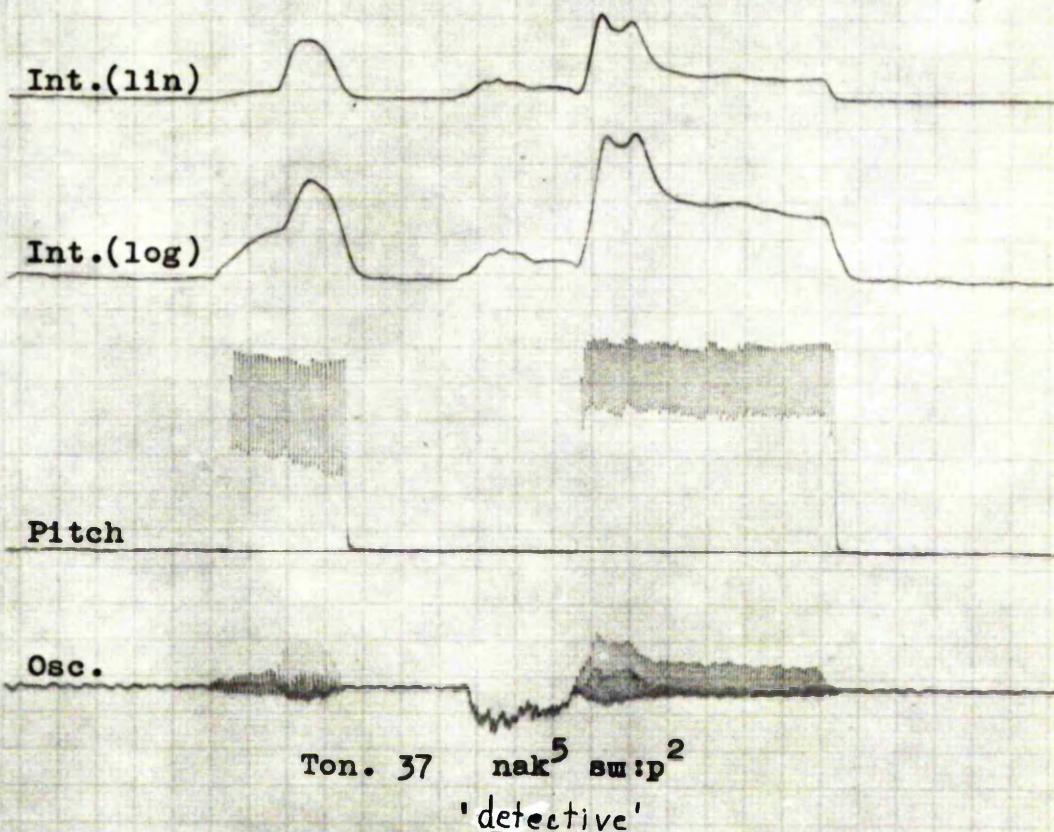
18. /ra:n⁴ kha:i¹ pla:³/ 'fish-shop'
[ㄩ ㄚ ㄣ]
19. /ra:n⁴ kha:i¹ ja:¹/ 'dispensary'
[ㄩ ㄚ ㄐ]
20. /na:m⁴ ta:n³ sa:i³/ 'granulated sugar'
[ㄋ ㄊ ㄣ]
21. /pha:⁶ phan³ khɔ:³/ 'scarf'
[ㄆ ㄆ ㄔ]
22. /da:t⁷ hɔ:¹ khɔ:ŋ¹ khwan¹/ 'gift wrapping paper'
[ㄉ ㄔ ㄔ ㄎ]
23. /da:t⁷ hɔ:¹ khɔ:ŋ¹ khwan¹ pi:³ mai¹/ 'New Year's gift
[ㄉ ㄔ ㄔ ㄎ ㄆ ㄐ] wrapping paper'
24. /phɔ:⁷ kha:⁴ kha:i¹ soŋ¹/ 'wholesale dealer'
[ㄆ ㄎ ㄎ ㄣ]

Variants of the Other Tones

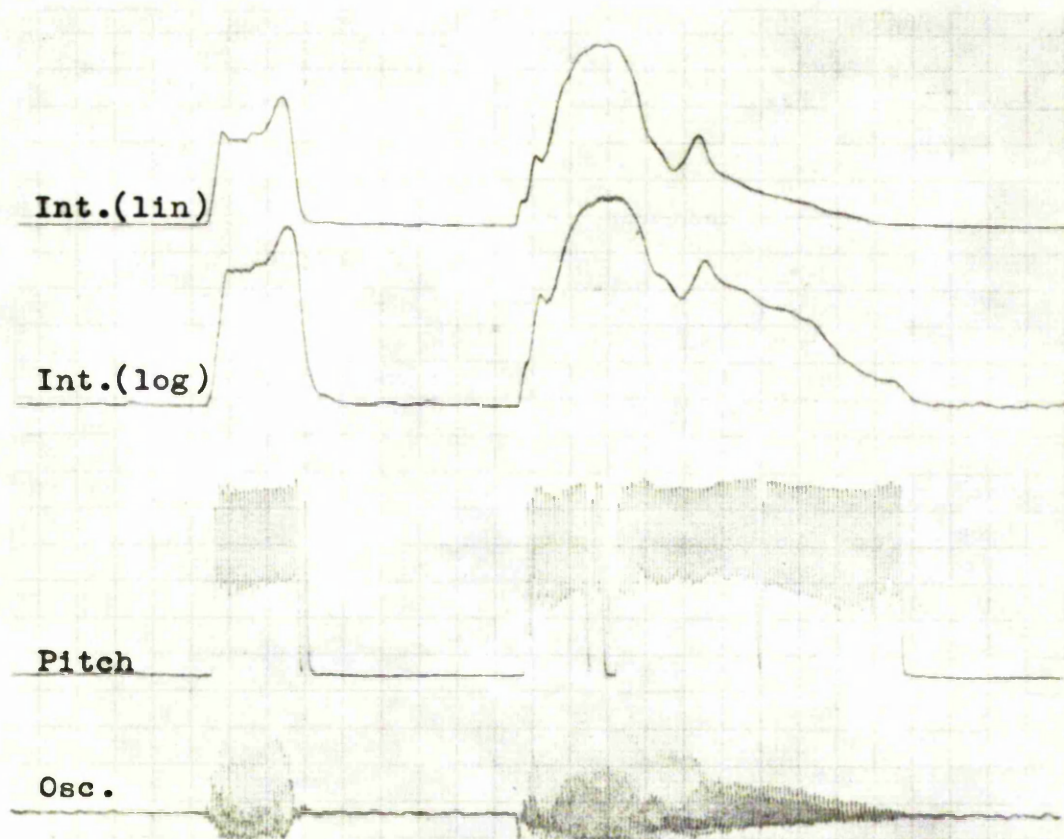
The remaining Tones 2, 4, 5, 6, and 7 do not have tonetic variants that differ perceptibly as between compounds and non-compounds except as regards length and rhythm. See Tons. 35-39 on pages 74, 75, and 76 in which the first element of the pair is a relatively shorter version of the same element as uttered in pre-pause position:-

- /khɔ:p² fa:⁴/ 'horizon' a compound of /khɔ:p²/ 'edge', and /fa:⁴/ 'sky' (See Ton. 35 on page 74.)
- /nɔ:ŋ⁴ sa:u¹/ 'younger sister' a compound of /nɔ:ŋ⁴/ 'sister', and /sa:u¹/ 'female' (See Ton. 36 on page 74.)
- /nak⁵ sw:p²/ 'detective' a compound of /nak⁵/ 'one who', and /sw:p²/ 'to seek clues' (See Ton. 37 on page 75.)





50 Hz.



Ton. 39 pet⁷ kai³

'barnyard fowl'

50 Hz.

/sw:ə⁶ fon¹/ 'rain-coat' a compound of /sw:ə⁶/ 'blouse',
and /fon¹/ 'rain' (See Ton. 38 on page
75.)

/pet⁷ kai³/ 'barnyard fowl' a compound of /pet⁷/
'duck', and /kai³/ 'chicken' (See Ton. 39
on page 76.)

It also appears that where the first element of a
compound has Tones 2, 4, 5, 6, and 7, the difference between
the compound and the corresponding sequence of a subject
noun and following verb is obtained by variation in length
and rhythm rather than by variation in the pitch contour.

Compare Tons. 40a and 40b, and 41a and 41b on pages
78, 79, and 80, in which it can be seen that /na:m⁴/ in the
(a) sentences is appreciably shorter than in the (b)
sentences:-

a. /na:m⁴ tɔk⁷ ca:k⁷ khau¹/ 'Waterfall from the mountain'
[ˌ ˈ ˈ ˌ]

b. /na:m⁴ tɔk⁷ ca:k⁷ khau¹/ 'Water falls from the moun-
[ˌ ˈ ˈ ˌ] tain.' (See Tons. 40a and
40b on pages 78, and 79.)

a. /na:m⁴ kheŋ¹/ 'ice'
[ˌ ˌ]

b. /na:m⁴ kheŋ¹/ 'Water is freezing.' (See Tons.
[ˌ ˌ] 41a and 41b on page 80.)

Int.(lin)

Int.(log)

Pitch

Osc.

Ton. 40a na:m⁴ to:k⁷ ca:k⁷ khu¹
 'Waterfall from the mountain'

50 Hz.

Int.(lin)

Int.(log)

Pitch

Osc.

Ton. 40b na:m⁴ tɔk⁷ ca:k⁷ khau¹
 'Water falls from the mountain.'

50 Hz.

Int.(lin)

Int.(log)

Pitch

Osc.

Ton. 41a na:m⁴ khiŋ¹
 'ice'

Int.(lin)

Int.(log)

Pitch

Osc.

Ton. 41b na:m⁴ khiŋ¹
 'Water is freezing.'

50 Hz.

Summary

The Seven tones may now be related to their tonetic realizations as shown below:-

Tone 1

| | | | |
|----|--|---------|---------------------|
| | /mi: ¹ / | [ʌ] | 'bear' |
| | /mi: ¹ phɔ:m ¹ / | [ʌ ʌ] | 'The bear is thin.' |
| | /mi: ¹ phɔ:m ¹ / | [ʌ ʌ] | 'thin bear' |
| or | /khon ¹ ta: ³ / | [ʌ ʌ] | 'eye-lash' |

Tone 2

| | | | |
|--|---|---------|------------------------|
| | /khɔ:p ² / | [ʔ] | 'edge' |
| | /phak ² / | [ʔ] | 'vegetable' |
| | /ci:t ² phlak ² / | [ʔ ʔ] | 'Miss Jeat pushed it.' |
| | /khɔ:p ² fa: ⁴ / | [ʔ ʌ] | 'horizon' |
| | /fa: ¹ fɛ:t ² / | [ʌ ʔ] | 'twin' |

Tone 3

| | | | |
|----|--|---------|-------------------|
| | /pha: ³ / | [ʌ] | 'to bring' |
| | /pla: ³ / | [ʌ] | 'fish' |
| | /pla: ³ kat ⁷ / | [ʌ ʌ] | 'The fish bites.' |
| | /pla: ³ kat ⁷ / | [ʌ ʌ] | 'fighting-fish' |
| or | /pla: ³ khem ³ / | [ʌ ʌ] | 'salt-fish' |

Tone 4

| | | | |
|--|---|---------|----------------------|
| | /na:m ⁴ / | [ʌ] | 'water' |
| | /na:m ⁴ kheŋ ¹ / | [ʌ ʌ] | 'Water is freezing.' |
| | /na:m ⁴ kheŋ ¹ / | [ʌ ʌ] | 'ice' |
| | /na:m ⁴ kha:ŋ ⁴ / | [ʌ ʌ] | 'dew' |

Tone 5

| | | |
|--|---------|------------------------|
| /phat ⁵ / | [ㄣ] | 'fan' |
| /jak ⁵ phlat ⁵ / | [ㄣ ㄣ] | 'The giant fell down.' |
| /phat ⁵ lom ³ / | [ㄣ ㄣ] | 'electric fan' |

Tone 6

| | | |
|--|---------|----------------------|
| /sw:ə ⁶ / | [ㄣ] | 'blouse, coat' |
| /pa: ⁶ kha:i ⁶ / | [ㄣ ㄣ] | 'Aunty has a fever.' |
| /sw:ə ⁶ pha: ⁶ / | [ㄣ ㄣ] | 'clothing' |
| /sw:ə ⁶ fon ¹ / | [ㄣ ㄣ] | 'rain-coat' |

Tone 7

| | | |
|--|---------|------------------------|
| /phɔ: ⁷ / | [ㄣ] | 'father' |
| /mu:ə ⁷ na:u ⁷ / | [ㄣ ㄣ] | 'The mango is rotten.' |
| /phɔ: ⁷ me: ⁷ / | [ㄣ ㄣ] | 'parents' |
| /pet ⁷ kai ³ / | [ㄣ ㄣ] | 'barnyard fowl' |

Further Examples of Compound Nouns where the Compounding Variant of Tone 1 is Found:-

1. /khem¹ thit⁵/ 'compass' a compound of /khem¹/
'needle', and /thit⁵/ 'point of the
compass'
2. /khe:n¹ sw:ə⁶/ 'sleeve' a compound of /khe:n¹/
'arm', and /sw:ə⁶/ 'blouse, coat'
3. /khɔ:ŋ¹ kin³/ 'eatables, foodstuff' a compound
of /khɔ:ŋ¹/ 'thing', and /kin³/
'to eat'
4. /khɔ:ŋ¹ kau³/ 'antique' a compound of /khɔ:ŋ¹/
'thing', and /kau³/ 'old'
5. /khai¹ kha:u¹/ 'egg-white' a compound of /khai¹/
'egg', and /kha:u¹/ 'white'
6. /khai¹ de:ŋ³/ 'yolk' a compound of /khai¹/ 'egg',
and /de:ŋ³/ 'red'
7. /kha:u¹ lw:ə³/ 'rumour' a compound of /kha:u¹/
'news', and /lw:ə³/ 'to be rumoured'
8. /thuŋ¹ tha:u⁴/ 'socks' a compound of /thuŋ¹/ 'bag',
and /tha:u⁴/ 'foot'
9. /thuŋ¹ mw:ə³/ 'gloves' a compound of /thuŋ¹/
'bag', and /mw:ə³/ 'hand'
10. /naŋ¹ ta:ə³/ 'eye-lid' a compound of /naŋ¹/
'skin', and /ta:ə³/ 'eye'
11. /su:ən¹ sat²/ 'zoo' a compound of /su:ən¹/
'garden', and /sat²/ 'animal'
12. /sa:i¹ bet⁷/ 'fishing-line' a compound of /sa:i¹/
'line', and /bet⁷/ 'fish-hook'
13. /mɔ:ə¹ nu:ət⁷/ 'masseur' a compound of /mɔ:ə¹/
'doctor', and /nu:ət⁷/ 'to massage'

14. /ja:¹ nat⁵/ 'snuff' a compound of /ja:¹/
'medicine', and /nat⁵/ 'to snuff'
15. /ha:ŋ¹ sw:ə¹/ 'rudder' a compound of /ha:ŋ¹/ 'tail',
and /sw:ə¹/ 'tiger'

Further Examples of Compound Nouns where the Compounding
Variant of Tone 3 is Found:-

1. /ta:³ pu:³/ 'nail' a compound of /ta:³/ 'eye',
and /pu:³/ 'crab'
2. /tha:ŋ³ ?ɔ:k⁷/ 'exit' a compound of /tha:ŋ³/ 'way',
and /?ɔ:k⁷/ 'to exit'
3. /tha:ŋ³ kha:u⁶/ 'entrance' a compound of /tha:ŋ³/
'way', and /kha:u⁶/ 'to enter'
4. /da:n³ dam³/ 'blackboard' a compound of /da:n³/
'board', and /dam³/ 'black'
5. /ka:n³ mw:əŋ³/ 'politics' a compound of /ka:n³/
'affairs of', and /mw:əŋ³/ 'town,
country'
6. /khon³ cha:i⁴/ 'servant' a compound of /khon³/
'person, one who', and /cha:i⁴/
'to use'
7. /khwa:m³ ciŋ³/ 'truth' a compound of /khwa:m³/
'state, condition', and /ciŋ³/ 'true'
8. /khru:³ jai¹/ 'principal' a compound of /khru:³/
'teacher', and /jai¹/ 'big,
superior'
9. /fai³ fa:⁴/ 'electricity' a compound of /fai³/
'fire', and /fa:⁴/ 'sky'
10. /na:i³ ca:ŋ⁶/ 'employer' a compound of /na:i³/
'master', and /ca:ŋ⁶/ 'to employ'

11. /na:ŋ³ fa:⁴/ 'fairy' a compound of /na:ŋ³/ 'lady, woman', and /fa:⁴/ 'sky'
12. /ŋɤn³ dɯ:ən³ 'salary' a compound of /ŋɤn³/ 'money', and /dɯ:ən³/ 'month'
13. /ŋɤn³ sɔt²/ 'cash' a compound of /ŋɤn³/ 'money', and /sɔt²/ 'fresh'
14. /cha:u³ su:ən¹/ 'gardener' a compound of /cha:u³/ 'inhabitant of, dweller in', and /su:ən¹/ 'garden'
15. /wan³ kɤ:t⁷/ 'birthday' a compound of /wan³/ 'day', and /kɤ:t⁷/ 'to be born'

Further Examples of Compound Nouns in which the First Syllables Have Tones 2, 4, 5, 6, and 7.

a) Tone 2 in the first place:-

1. /ma:k² ruk⁵/ 'chess' a compound of /ma:k²/ 'areca-nut', and /ruk⁵/ 'to oppress'
2. /ma:k² keɸ⁷/ 'jackstones' a compound of /ma:k²/ 'areca-nut', and /keɸ⁷/ 'to collect'
3. /se:t² su:ən¹/ 'fractions' a compound of /se:t²/ 'remainder', and /su:ən¹/ 'portion'
4. /se:t² ta:ŋ³/ 'change' a compound of /se:t²/ 'remainder', and /ta:ŋ³/ 'money'
5. /he:t² phon¹/ 'reason' a compound of /he:t²/ 'cause', and /phon¹/ 'effect'
6. /hi:p² si:əŋ¹/ 'gramophone' a compound of /hi:p²/ 'box', and /si:əŋ¹/ 'sound'
7. /lɔ:t² du:t⁷/ '(drinking) straw' a compound of /lɔ:t²/ 'tube', and /du:t⁷/ 'to suck'

8. /lɔ:t² fai³/ 'bulb' a compound of /lɔ:t²/ 'tube',
and /fai³/ 'fire'
9. /lek² nai³/ 'string' a compound of /lek²/ 'iron',
and /nai³/ 'in'
10. /lek² chai³/ 'gimlet' a compound of /lek²/
'iron', and /chai³/ 'to drill'

b) Tone 4 in the first place:-

1. /na:m⁴ ta:³/ 'tears' a compound of /na:m⁴/
'water', and /ta:³/ 'eye'
2. /na:m⁴ kha:ɣ⁴/ 'dew' a compound of /na:m⁴/
'water', and /kha:ɣ⁴/ 'to remain'
3. /na:m⁴ phɯɣ⁶/ 'honey' a compound of /na:m⁴/
'water', and /phɯɣ⁶/ 'bee'
4. /niu⁴ chi:⁴/ 'fore-finger' a compound of /niu⁴/
'finger', and /chi:⁴/ 'to point'
5. /ma:i⁴ pha:i³/ 'paddle' a compound of /ma:i⁴/
'wood', and /pha:i³/ 'to row'
6. /ma:i⁴ khi:t²/ 'match' a compound of /ma:i⁴/
'wood', and /khi:t²/ 'to scratch'
7. /ma:i⁴ kwa:t⁷/ 'broom' a compound of /ma:i⁴/
'wood', and /kwa:t⁷/ 'to sweep'
8. /chɔ:n⁴ to:⁷/ 'table-spoon' a compound of /chɔ:n⁴/
'spoon', and /to:⁷/ 'table'
9. /chɔ:n⁴ cha:³/ 'tea-spoon' a compound of /chɔ:n⁴/
'spoon', and /cha:³/ 'tea'
10. /ra:n⁴ mɔ:¹/ 'clinic' a compound of /ra:n⁴/
'shop', and /mɔ:¹/ 'doctor'

c) Tone 5 in the first place:-

1. /nak⁵ bin³/ 'pilot' a compound of /nak⁵/
'one who', and /bin³/ 'to fly'
2. /nak⁵ bun³/ 'saint' a compound of /nak⁵/
'one who', and /bun³/ 'merit'
3. /phak⁵ phu:ək⁷/ 'followers, partisan' a compound
of /phak⁵/ 'party', and /phu:ək⁷/
'company'
4. /phat⁵ lom³/ '(electric) fan' a compound of
/phat⁵/ 'fan, and /lom³/ 'wind'
5. /mat⁵ cam³/ 'deposit' a compound of /mat⁵/
'to tie', and /cam³/ 'to remember'
6. /rak⁵ re:ʔ⁷/ 'dahlia (flower)' a compound of
/rak⁵/ 'to love', and /re:ʔ⁷/ 'to
wander about'
7. /rɔt⁵ fai³/ 'train' a compound of /rɔt⁵/
'carriage', and /fai³/ 'fire'
8. /rɔt⁵ ma:ʔ⁴/ 'horse-carriage' a compound of
/rɔt⁵/ 'carriage', and /ma:ʔ⁴/
'horse'
9. /rɔt⁵ ra:ŋ³/ 'tram' a compound of /rɔt⁵/
'carriage', and /ra:ŋ³/ 'rail'
10. /nak⁵ rɔ:ŋ⁴/ 'singer' a compound of /nak⁵/
'one who', and /rɔ:ŋ⁴/

d) Tone 6 in the first place:-

1. /pha:ʔ⁶ hom¹/ 'shawl' a compound of /pha:ʔ⁶/
'cloth', and /hom¹/ 'to clothe'
2. /phu:ʔ⁶ khum³/ 'prison-guard' a compound of /phu:ʔ⁶/
'one who', and /khum³/ 'to guard'

3. /phu:⁶ chuəi⁷/ 'assistant' a compound of /phu:⁶/
'one who', and /chuəi⁷/ 'to help'
4. /ba:n⁶ phak⁵/ 'resthouse' a compound of /ba:n⁶/
'house', and /phak⁵/ 'to rest'
5. /ba:n⁶ kɤ:t⁷/ 'birthplace' a compound of /ba:n⁶/
'house', and /kɤ:t⁷/ 'to be born'
6. /kha:u⁶ phat²/ 'fried-rice' a compound of /kha:u⁶/
'rice', and /phat²/ 'to fry'
7. /khɔ:⁶ khwa:m³/ 'passage' a compound of /khɔ:⁶/
'item', and /khwa:m³/ 'subject'
8. /khɔ:⁶ mu:³/ 'wrist' a compound of /khɔ:⁶/
'joint, and /mu:³/ 'hand'
9. /kluəi⁶ ma:i⁴/ 'orchid' a compound of /kluəi⁶/
'banana', and /ma:i⁴/ 'wood'
10. /mɔ:⁶ kha:u⁶/ 'rice-pot' a compound of /mɔ:⁶/
'pot', and /kha:u⁶/ 'rice'
11. /tɔn⁶ ma:i⁴/ 'tree' a compound of /tɔn⁶/
'classifier for tree', and /ma:i⁴/
'wood'
12. /sw:ə⁶ pha:⁶/ 'clothing' a compound of /sw:ə⁶/
'coat, upper garment', and /pha:⁶/
'cloth, lower garment'
13. /sw:ə⁶ nɔ:n³/ 'pyjama' a compound of /sw:ə⁶/
'coat, blouse', and /nɔ:n³/ 'to
sleep'
14. /sw:ə⁶ khlum³/ 'overcoat' a compound of /sw:ə⁶/
'coat, blouse', and /khlum³/ 'to
cover over'

e) Tone 7 in the first place:-

1. /phɔ:⁷ mɛ:⁷/ 'parents' a compound of /phɔ:⁷/
'father', and /mɛ:⁷/ 'mother'
2. /phi:⁷ nɔ:⁴/ 'brothers and sisters' a compound
of /phi:⁷/ 'older sibling', and
/nɔ:⁴/ 'younger sibling'
3. /phɔ:⁷ ta:³/ 'father-in-law' a compound of /phɔ:⁷/
'father', and /ta:³/ 'grandfather'
4. /mɛ:⁷ ja:i³/ 'mother-in-law' a compound of
/mɛ:⁷/ 'mother', and /ja:i³/
'grandmother'
5. /mɛ:⁷ na:m⁴/ 'river' a compound of /mɛ:⁷/ 'mother',
and /na:m⁴/ 'water'
6. /lu:k⁷ la:n¹/ 'descendents' a compound of /lu:k⁷/
'child', and /la:n¹/ 'grandchild'
7. /dɔ:k⁷ ma:i⁴/ 'flower' a compound of /dɔ:k⁷/
'classifier of flower', and /ma:i⁴/
'wood'

CHAPTER 6

TONEMIC INTERPRETATION OF THE TONESCorrelation of Tones with Syllabic Structure of Monosyllables

Suratthani monosyllables may be of the following structure:-

- 1) CV: - an initial consonant followed by a long vowel, a diphthong, or a triphthong.
- 2) CCV: - an initial consonant cluster followed by a long vowel, a diphthong, or a triphthong.
- 3) CVC - an initial consonant followed by a short vowel, and ending in a voiceless unaspirated plosive or a nasal.
- 4) CCVC - an initial consonant cluster followed by a short vowel and ending with a voiceless unaspirated plosive or a nasal.
- 5) CV:C - an initial consonant followed by a long vowel or a diphthong and ending with a voiceless unaspirated plosive or a nasal.
- 6) CCV:C - an initial consonant cluster followed by a long vowel or a diphthong and ending with a voiceless unaspirated plosive or a nasal.

When an attempt is made to correlate the seven tones with the syllable structures set out on the preceding page, it is found that there are certain restrictions upon their occurrence, as set out in Tables I and II (see Tables I and II on pages 95 and 96).

It is found that tones are restricted in occurrence with respect to

- 1) initial consonants
- 2) final consonants
- and 3) vowel length.

Restrictions Associated with Initial Consonants

Initial consonants may be divided into two classes according to their correlation with tones as follows:-

Consonant class I: aspirated plosives, an aspirated affricate, fricatives, and sonorants (i.e. m, n, ŋ, l, r, and w). The members of this class may occur as initial consonants with all seven tones, except that the consonant clusters /phr/ and /khr/ do not occur with Tones 1, 2, and 6. Consonant clusters /phl/ and /khl/ do not occur with Tone 6. (See Table I on page 95.)

Consonant class II: unaspirated plosives (both voiced and voiceless), and an unaspirated affricate. These may occur initially with Tones 3, 6, and 7 only, except that the consonant cluster /tr/ does not occur with Tone 6. (See Table I on page 95.)

Restrictions Associated with the Syllable Ending, and with the Nature of Final Consonants

It is found convenient here to classify syllables into two types:-

vowels and

1. Syllables ending in /sonorants which will be called 'smooth syllables'.

2. Syllables ending in voiceless unaspirated plosives which will be called 'checked syllables'.

Smooth syllables may occur with Tones 1, 3, 4, 6, and 7 but not with Tones 2 and 5. (See Table II on page 96.)

Checked syllables ending with /-p, -t, and -k/ may occur with Tones 2, 5, and 7 but not with Tones 1, 3, 4, and 6. Checked syllables ending with /-ʔ/ occur with only Tones 2 and 7. (See Table II on page 96.)

Restrictions Associated with Vowel Length

Checked syllables are further restricted according to whether they contain long or short vowels as follows:-

Checked syllables with long vowels may occur with Tones 2 and 7 only. (See Tables II on page 96.)

Checked syllables with short vowels may occur with Tones 2, 5, and 7. And there are no short checked syllables ending with /-ʔ/ at all. (See Table II on page 96.)

There are further sub-classifications on smooth and checked syllables:-

Smooth syllables with an initial consonant of Class II are found on Tones 3 and 6 only, either with long or short vowels. (See Table IV on page 98.)

Checked syllables with an initial consonant of Class I are found on Tones 2 and 5 with short vowels, and on Tones 2 and 7 with long vowels. (See Table III on page 97.)

Checked syllables with an initial consonant of Class II are found with either long or short vowels on Tone 7 only. (See Table IV on page 98)

Tones and Tonemes

Smooth Syllables

When the correlations of tones with initial consonants, syllable types (smooth or checked) and vowel length are examined, it is found that the maximum number of contrasting tones on a syllable of a given phonemic structure is five. This 5-way contrast is found with smooth syllables beginning with a consonant of Class I.

Examples:

| | | |
|---------------------------|----------------------|------------|
| High falling tone as in | /kha: ¹ / | 'leg' |
| Rising-falling tone as in | /kha: ³ / | 'to stuck' |
| Low level tone as in | /kha: ⁴ / | 'to trade' |
| Mid level tone as in | /kha: ⁶ / | 'to kill' |
| Low rising tone as in | /kha: ⁷ / | 'value' |

(See Table III on page 97.)

This set of 5 words distinguished solely by pitch, demonstrates clearly that at least 5 tonemes must be postulated for this dialect. These tonemes are given Roman numerals below to distinguish them from the Arabic numerals used for tones. The tones of the set of 5 words cited above may be regarded as the realizations of these tonemes in smooth syllables.

Examples:

- Toneme I - realized as high falling tone (1)
- Toneme II - realized as rising-falling tone (3)

- Toneme III - realized as low level tone (4)
- Toneme IV - realized as mid level tone (6)
- Toneme V - realized as low rising tone (7).

Smooth syllables beginning with a consonant of Class II have a maximum of two tonal contrasts, being found only with either Tone 3 (rising-falling) or Tone 6 (mid level). (See Table IV on page 98.)

Examples:

Rising-falling tone as in /ka:³/ 'crow'

Mid level tone as in /kla:⁶/ 'brave'

(See Table IV on page 98.)

Since Tones 3 and 6 have been proposed as the realizations of Tonemes II and IV respectively, when they occur on smooth syllables with Class I initial consonant, I shall regard smooth Class II initial consonant syllables as being characterized by either Toneme II or Toneme IV, with no instances of Toneme I, III or V on syllables of this type.

Checked Syllables

For checked syllables it is found that there are never more than 3 contrastive tones: High level tone (2), Lower falling tone (5), and Low rising tone (7). It is further found that checked syllables with an initial Class I consonant and a long vowel are restricted to only two contrastive tones, High level tone (2) and Low rising tone (7). And that with a short vowel they are restricted to High level tone (2) and Lower falling tone (5) only.

Table I. Correlation of Initial Consonants and Tones

| Tone | | 1. High Falling | 2. High Level | 3. Rising -Falling | 4. Low Level | 5. Lower Falling | 6. Mid Level | 7. Low Rising |
|---|-------|-----------------------------|----------------------------------|-----------------------|---------------------------------|----------------------------------|------------------------------|----------------------------------|
| | | ↘ | ┐ | ↗ | └ | ↘ | ┐ | ↗ |
| C O N S O N A N T C L A S S I | ph- | pha: split | phak vegetable | pha: bring | pha:i daughter- in-law | phak rest | pha: cloth | pha:ʔ rashly |
| | phl- | phla:n destroy | phlak push | phlu: betel leaf | phan say without thinking | phlat fall | | phla:t miss |
| | phr- | | | phre: silk | phra: jungle knife | phrɔk shell of the coconut | | phra:k separate |
| | th- | thɔ: pe's | thɔ:t take off | thɔ: weave | thɔ: discourage | thup hit | tha: wait | thu:p incense |
| | kh- | khɔ: leg | kha:t torn | kha: stuck | kha: trade | khat select | kha: kill | kha: value |
| | kh1- | kh1ɔ:i hook | kh1ip trim | kh1ɔ:ŋ canal | khla:i look like | kh1uk mix together | | kh1ɔ:ŋ fluently |
| | khrr- | | | khrai who | khra:n lazy | khrrɔk mortar | | khrrɔ:m stride |
| | khw- | khoa: right | khwit gore | khoa:i buffalo | khoa: grasp at | khwak scoop out | khwam turn upside down | khoa:ŋ throw |
| | m- | mɔ: doctor | mɔ:k fog | ma: come | ma: horse | mat tie | mɔ: pot | ma:n curtain |
| | n- | na: thick | na:t size | na: rice-field | niu finger | nat make an appointment | na: face | na:u rotten |
| | ŋ- | ŋa:i turn the face up | ŋɔ:k grey hair | ŋu: snake | ŋiu Chinese drama | ŋat force up | ŋu:ən busy | ŋa:i easy |
| | ch- | che: disclose | chi:k tear | cha: numb | cha: slow | chet wipe | chɔ: cheat | chw: name |
| | f- | fa: wall | fa:t astringent | fai fire | fa: sky | fat wrestle | fa:i cotton | fa:t slap |
| | s- | si: colour | sip ten | sɔ: fiddle | sw: buy | sak wash | so: chain | sw: straight |
| | j- | ja: medicine | ja:k want | jɔ: flatter | ja:i move | jak giant | ja: grass | ja:k difficult |
| | h- | hɔ: wrap | hɔ:ʔ float through the air | ha: laugh loudly | ha: swear word | hwt fury | hɔ:ŋ room | ha: particle in a sentence |
| | l- | liɔu look behind | lap sleep | la: say good-bye | liɔu turn | lak steal | la: late | lɔ: mule |
| | r- | ru: luxurious | rit manner | ru: hole | rɔ:i hundred | rak love | ri: dash ahead | ru:ə leak |
| | w- | wi: comb | wat messy | wi: fan | wa:i keep | wat temple | wa:i pay respect | wə: blame |
| C O N S O N A N T C L A S S I II | p- | | | pa: forest | | | pa: aunt | pa:k mouth |
| | pl- | | | pla: fish | | | plɔ:ŋ internode | plɔ:p soothe |
| | pr- | | | pra:ŋ stupa | | | priəu sour | prɔ:ʔ fragile |
| | b- | | | bɔ: pond | | | ba: mad | bɔ:t blinded |
| | t- | | | ti: beat | | | tu: cupboard | tat cut |
| | tr- | | | tra: seal | | | | trɔ:k lane |
| | d- | | | da: scold | | | da:i thread | da:t paper |
| | k- | | | ke: old | | | ke: correct | ke:ʔ sheep |
| | kl- | | | klai far | | | kla:i near | kli:p petal |
| | kr- | | | krɔ: spin | | | krɔ: rattan ball | krɔ:k pour in |
| | kw- | | | kwa:ŋ deer | | | kwa:ŋ wide | kwa:t sweep |
| | ʔ- | | | ʔa:n read | | | ʔa: open | ʔa:p bathe |
| | c- | | | ca: sergeant | | | ca: bright | cik peck |

Table II. Correlation of Tones with Vowel Length and Final Consonants

| Tone Final Short and Long Vowels | | 1. High Falling | 2. High Level | 3. Rising -Falling | 4. Low Level | 5. Lower Falling | 6. Mid Level | 7. Low Rising |
|--|----|--------------------|---------------------|-----------------------|-----------------|---------------------------|------------------------------|----------------------|
| | | ㄣ | ㄣ | ㄣ | ㄣ | ㄣ | ㄣ | ㄣ |
| S M O O T H S Y L L A B L E S | | kha: leg | | kha: stuck | kha: trade | | kha: kill | kha: value |
| | -m | kham funny | | cam remember | kham uphold | | tham cave | kham dark |
| | | tha:m ask | | ca:m sneeze | na:m water | | kha:m cross | ja:m cloth-bag |
| | -n | fin opium | | nan bet | phon pass by | | pan mould | phon spray |
| | | si:n morals | | na:n long | so:n pile up | | pa:n not sharp | so:n hide |
| | -ŋ | raŋ occidental | | thoŋ flag | raŋ pull | | doŋ winnowing- basket | chaŋ weigh |
| | | wa:ŋ dawn | | do:ŋ protruded | la:ŋ clean | | so:ŋ hold up the light | la:ŋ below |
| | -p | | khɔp bite | | | khɔp associate with | | kɔp frog |
| | | | khɔ:p edge | | | | | khɔ:p cover up |
| | -t | | khat interrupt | | | khat select | | kat bite |
| | | | kha:t torn | | | | | kha:t conjunction |
| C H E C K E D S Y L L A B L E S | -k | | jak serrated | | | jak giant | | pɔk cover |
| | | | ja:k want | | | | | pɔ:k peel |
| | -ʔ | | | | | | | |
| | | | chɔ:ʔ split open | | | | | cɔ:ʔ drill |

Table III. Correlation of Consonant Class I with Tones, Vowel Length and Final Consonants

| Tones Final Short and Long Vowels | | 1. High Falling | 2. High Level | 3. Rising -Falling | 4. Low Level | 5. Lower Falling | 6. Mid Level | 7. Low Rising |
|---|----|-------------------------|----------------------------|---------------------------|-------------------------|----------------------|------------------------------|-----------------------------------|
| | | ㄣ | ㄣ | ㄣ | ㄣ | ㄣ | ㄣ | ㄣ |
| S M O O T H S Y L L A B L E S | | kha: <i>leg</i> | | kha: <i>stuck</i> | kha: <i>trade</i> | | kha: <i>kill</i> | kha: <i>value</i> |
| | -m | jam <i>blend</i> | | jam <i>salad</i> | lɔm <i>fall</i> | | sɔm <i>orange</i> | jam <i>fread</i> |
| | | ja:m <i>insult</i> | | ja:m <i>watchman</i> | lɔ:m <i>surround</i> | | sɔ:m <i>fork</i> | ja:m <i>cloth-bag</i> |
| | -n | khan <i>to crow</i> | | khan <i>itchy</i> | khɔn <i>search</i> | | sɔn <i>heel</i> | rɔn <i>move close together</i> |
| | | kha:n <i>answer</i> | | kha:n <i>palanquin</i> | khɔ:n <i>hammer</i> | | sɔ:n <i>strain(water)</i> | rɔ:n <i>sift</i> |
| | -ŋ | khaŋ <i>imprison</i> | | faŋ <i>listen</i> | thuŋ <i>to pound</i> | | thuŋ <i>cistern</i> | khaŋ <i>congested</i> |
| | | kha:ŋ <i>a top</i> | | fa:ŋ <i>straw</i> | kha:ŋ <i>remain</i> | | kha:ŋ <i>side</i> | kha:ŋ <i>langur</i> |
| | -p | | khap <i>drive</i> | | | khap <i>tight</i> | | |
| | | | kha:p <i>centipede</i> | | | | | kha:p <i>hold in the mouth</i> |
| | -t | | ɟɔt <i>drop</i> | | | ɟɔt <i>honour</i> | | |
| | | | ɟɔ:t <i>to drip</i> | | | | | ɟɔ:t <i>top</i> |
| S Y L L A B L E S | -k | | lek <i>iron</i> | | | lek <i>small</i> | | |
| | | | le:k <i>crushed</i> | | | | | le:k <i>exchange</i> |
| | -ʔ | | | | | | | |
| | | | chɔ:ʔ <i>split open</i> | | | | | khɔ:ʔ <i>knock</i> |

Examples:

| | <u>Checked syllables</u> <u>with short vowels</u> | <u>Checked syllables</u> <u>with long vowels</u> |
|---------------|--|---|
| High level | /khap ² / 'to drive' | /kha:p ² / 'centipede' |
| Lower falling | /khap ⁵ / 'tight' | --- |
| Low rising | --- | /kha:p ⁷ / 'to hold in the mouth' |

(See Table III on page 97).

It will be seen that Tone 7 (low rising) is common to both checked and smooth syllables. We may thus regard /kha:p⁷/ above as having Toneme V, like /kha:⁷/ 'value' (see page 93).

The treatment of Tones 2 (high level) and 5 (lower falling) on checked syllables, as in the examples above, is not quite so straightforward. These tones do not occur with smooth syllables (see Table III on page 97), but it seems reasonable to interpret them as the realizations in checked syllables of two of the tonemes occurring with smooth syllables. On grounds of 'phonetic similarity', it has been decided in this thesis to regard Tone 2 (high level) as being in complementary distribution with Tone 1 (high falling) and thus to assign it to Toneme I. Tone 5 (lower falling) is similarly regarded as being in complementary distribution with Tone 4 (low level), and is thus assigned to Toneme III. The conditioning factor in both cases is whether the syllable is checked or smooth.

There is one further phonological problem which relates to checked syllables beginning with consonants of Class II. The tone on this type of syllable is entirely predictable; that is, it must be low rising (whether the vowel is long or short is not relevant here).

Examples:

| <u>Checked syllables</u> <u>of consonant Class I</u> | <u>Short vowels</u> | <u>Long vowels</u> |
|---|---------------------------------------|--|
| /p-/ | /pak ⁷ / 'to embroider' | /pa:k ⁷ / 'mouth' |
| /b-/ | /bɔk ⁷ / 'land' | /bɔ:k ⁷ / 'to tell' |
| /t-/ | /tak ⁷ / 'lap' | /ta:k ⁷ / 'to dry in the sun' |
| /d-/ | /dut ⁷ / 'to stumble' | /du:t ⁷ / 'to suck' |
| /k-/ | /kɔt ⁷ / 'to press' | /kɔ:t ⁷ / 'to embress' |
| /ʔ-/ | /ʔap ⁷ / 'stuffy' | /ʔa:p ⁷ / 'to bathe' |
| /c-/ | /cɔp ⁷ / 'to end' | /cɔ:p ⁷ / 'hoe' |

(See Table IV on page 98.)

There is thus a kind of redundancy here. If we know a syllable is checked and has an initial consonant of Class II we know at once that it must also have a low rising pitch. It could therefore be argued that since for syllables of this structure there are no contrasting pitch possibilities, we cannot properly speak of 'phonological tone' as a characteristic of such syllables. My preferred solution, however, is to follow the general pattern of the language as a whole and to regard these syllables as having Tone 7, i.e. a realization of Toneme V, in spite of the redundancy involved in doing so.

To sum up, the Suratthani dialect may be regarded as having five tonemes representing the irreducible

minimum number of tonal contrasts, with realizations as follows:-

- Toneme I is realized as Tone 1 (high falling) in smooth syllables, and as Tone 2 (high level) in checked syllables.
- Toneme II (restricted to smooth syllables) is realized as Tone 3 (rising-falling).
- Toneme III is realized as Tone 4 (low level) in smooth syllables and as Tone 5 (lower falling) in checked syllables.
- Toneme IV (restricted to smooth syllables) is realized as Tone 6 (mid level).
- Toneme V is realized as Tone 7 (low rising) on all types of syllables.

For mnemonic purposes, it is convenient to have general descriptive labels of some kind to accompany the Roman numerals for the tonemes. These labels should be different from those used for tones, so as to avoid confusion. It is suggested that the labels for tonemes should be as below:-

- Toneme I = High (Symbolized by a raised ^h)
- Toneme II = Convex (Symbolized by a raised ^c)
- Toneme III = Low (Symbolized by a raised ^l)
- Toneme IV = Mid (Symbolized by a raised ^m)
- Toneme V = Rise (Symbolized by a raised ^r)

The relationships between tonemes, tones, and tonetic variants can now be indicated in the transcription as follows:-

| <u>Toneme</u> | <u>Tone</u> | <u>Tonetic</u> <u>Realization</u> |
|---|---|--------------------------------------|
| I. | | |
| /kha: ^h / | /kha: ¹ / | [↘] 'leg' |
| /mi: ^h phɔ:m ^h / | /mi: ¹ phɔ:m ¹ / | [↘ ↘] 'The bear is thin.' |
| /mi: ^h phɔ:m ^h / | /mi: ¹ phɔ:m ¹ / | [↘ ↘] 'thin bear' |
| /khon ^h ta: ^c / | /khon ¹ ta: ³ / | [↘ ↗] 'eye-lash' |
| /kha:p ^h / | /kha:p ² / | [↘] 'centipede' |
| /khap ^h / | /khap ² / | [↘] 'to drive' |
| /ci:t ^h phlak ^h / | /ci:t ² phlak ² / | [↘ ↘] 'Miss Jeat pushed it.' |
| /he:t ^h phon ^h / | /he:t ² phon ¹ / | [↘ ↘] 'reason' |
| /fa: ^h fe:t ^h / | /fa: ¹ fe:t ² / | [↘ ↘] 'twin' |
| /khɔ:p ^h fa: ¹ / | /khɔ:p ² fa: ⁴ / | [↘ ↘] 'horizon' |
| II. | | |
| /kha: ^c / | /kha: ³ / | [↗] 'to stuck' |
| /ka: ^c / | /ka: ³ / | [↗] 'crow' |
| /pla: ^c kat ^r / | /pla: ³ kat ⁷ / | [↗ ↘] 'The fish bites.' |
| /pla: ^c kat ^r / | /pla: ³ kat ⁷ / | [↗ ↘] 'fighting-fish' |
| /pla: ^c khem ^c / | /pla: ³ khem ³ / | [↗ ↗] 'salt-fish' |
| III. | | |
| /kha: ¹ / | /kha: ⁴ / | [↘] 'to trade' |
| /na:m ¹ kheŋ ^h / | /na:m ⁴ kheŋ ¹ / | [↘ ↘] 'Water is freezing.' |
| /na:m ¹ kheŋ ^h / | /na:m ⁴ kheŋ ¹ / | [↘ ↘] 'ice' |
| /na:m ¹ kha:ŋ ¹ / | /na:m ⁴ kha:ŋ ⁴ / | [↘ ↘] 'dew' |
| /khap ¹ / | /khap ⁵ / | [↘] 'tight' |

| <u>Toneme</u> | <u>Tone</u> | <u>Tonetic</u> <u>Realization</u> |
|---|---|--------------------------------------|
| /jak ¹ phlat ¹ / | /jak ⁵ phlat ⁵ / | [√ √] 'The giant fell down.' |
| /phat ¹ lom ^c / | /phat ⁵ lom ³ / | [√ ~] 'electric fan' |
| /nak ¹ rɔ:ŋ ¹ / | /nak ⁵ rɔ:ŋ ⁴ / | [√ √] 'singer' |
| IV. | | |
| /kha: ^m / | /kha: ⁶ / | [—] 'to kill' |
| /kla: ^m / | /kla: ⁶ / | [—] 'brave' |
| /pa: ^m kha:i ^m / | /pa: ⁶ kha:i ⁶ / | [— —] 'Aunty has a fever.' |
| /sw:ə ^m pha: ^m / | /sw:ə ⁶ pha: ⁶ / | [— —] 'clothing' |
| /sw:ə ^m fon ^h / | /sw:ə ⁶ fon ¹ / | [— ~] 'rain-coat' |
| V. | | |
| /kha: ^r / | /kha: ⁷ / | [/] 'value' |
| /kha:p ^r / | /kha:p ⁷ / | [/] 'to hold in the mouth' |
| /ka:p ^r / | /ka:p ⁷ / | [/] 'spathe' |
| /kap ^r / | /kap ⁷ / | [/] 'food' |
| /mu:əŋ ^r na:u ^r / | /mu:əŋ ⁷ na:u ⁷ / | [/ /] 'The mango is rotten.' |
| /phɔ: ^r me: ^r / | /phɔ: ⁷ me: ⁷ / | [/ /] 'parents' |
| /pet ^r kai ^c / | /pet ⁷ kai ³ / | [/ ~] 'barnyard fowl' |

CHAPTER 7

CONCLUSION

Apart from its account of the phonetic features of a dialect of Thai which has hitherto received little attention from linguists, the most important contribution of the present study is probably the demonstration of the way in which the phonetic features of utterances in a language of this type are used to serve grammatical ends.

As in many other languages of the area, word forms in Thai are invariable with the possible exception of certain particles (Ref. Henderson 1949: 142-148), so that grammatical relations expressed in other kinds of language by morphological means must be expressed in terms of word order. This means, however, that many sentences which look in their orthographic or lexical form to be identical may have different meanings.

Examples: The sequence of words

tâŋ tôn sàg¹
ตั้ง ต้น นั่ง

may mean 'Stand a teak-tree upright.'
or 'Begin to tattoo.' (Noss 1964: 41)

maa aw sîi mooy
มา เอา สิ มวย

may mean 'came to get it at 10 o'clock'
or 'chose to come at 10 o'clock' (Noss 1964: 47)

Both sentences are indistinguishable to the eye, but it has been realized for some time, though not exhaustively

¹Examples from Noss are cited in his own transcription.

studied, that when such sentences are uttered they are in fact usually not ambiguous to Thai listeners, but are 'disambiguated' by subtle variations in the rhythmic grouping of the component elements. These important rhythmic distinctions appear to involve slight variations in syllable length and also certain modifications of the pitch realizations of the tones. (See Noss 1964: 23-24, 41-48, 1971: 39-41; Hiranburana 1971.)

Hiranburana has shown that Standard Thai sentences such as:-

/plaa ˋˊ laj paj ˋˊ mot ˋˊ leew¹/ (page 48)

- | | | | | | | | |
|----|---|---|---|---|---|----|--|
| A. | 3 | 1 | 3 | 1 | 3 | A. | ' <u>The eels</u> are gone.' |
| B. | 1 | 1 | 3 | 1 | 3 | B. | 'The <u>fish</u> have all <u>escaped</u> .' |

/ˋˊ naam ˋˊ khaan ˋˊ juu bon ˋˊ jaa/ (page 49)

- | | | | | | | | |
|----|---|---|---|---|---|----|---|
| A. | 3 | 1 | 3 | 3 | 1 | A. | ' <u>The dew</u> is still on the grass.' |
| B. | 1 | 3 | 3 | 3 | 1 | B. | ' <u>The water rests</u> on the grass.' |

can be regularly 'disambiguated' by Thais on the basis of what she calls 'different accentual patterns'. The numbers 1 to 3 in her examples represent varying degrees of accent. The precise nature of the pitch variations on 'unaccented' or non-prominent syllables in Standard Thai is frequently difficult to analyse, and appears on the whole to amount to a curtailed version of the pitch contour appropriate to 'accented' syllables.

The special interest of Suratthani is that in the case of at least two of the tones, the variants are clearly perceptible, and have demonstrably different pitch contours. This reinforces the claims of earlier writers about the

¹Examples from Hiranburana are cited in her own transcription.

phonetic manifestation of grammatical structures in Standard Thai, and has important implications for the teaching of Thai and typologically similar languages.

It is recognized that the present study is only a small step forward, since it is restricted to sequences of one or two syllables only, and to emotionally neutral utterances. It is highly probable that further investigation would uncover many more characteristics of natural continuous speech, further tonetic variants, and pitch features which would require to be ascribed to intonation rather than to lexical tone. (Ref. Henderson 1949 and Chuenkongchoo 1956.) There are hints of this already in the 3 or 4 syllable utterances illustrated in Tons. 31-34, 40a. and 40b. on pages 70, 71, 78, and 79 respectively, and in the taped passages of continuous Suratthani speech that I have listened to.

APPENDIX

NOTES ON THE FRØKJAER-JENSEN PITCHMETER
AND THE PALATOGRAMS

BY

Mr A.W. STONE

The instruments used for the production of the instrumental traces in this Thesis were as follows:-

- (a) The FRØKJAER-JENSEN Trans-Pitchmeter
- (b) The FRØKJAER-JENSEN Intensity meter
- (c) The ELEMA-SCHONANDER Mingograf 800

(a) The Pitch Meter is an instrument for converting varying frequency (pitch), into varying D.C. voltages; the lower frequencies converting to a progressively greater voltage as the pitch falls, and conversely, to a lesser voltage for the higher frequencies. This has the effect of deflecting the ink-jet on the Mingograf (see below) to produce a series of lines, longer for the low frequencies and shorter for higher frequencies, reading from the bottom of the trace. A calibration grid is included for measuring purposes.

(b) The Intensity Meter also produces a varying D.C. voltage proportional to the degree of energy contained within the word or phrase, showing higher 'peaks' in decibels for the greater intensity.

(c) The Mingograf is an ink-writing oscilloscope employing ink-jet galvanometers (one for each channel) which 'write' their excursions onto a moving, folded chart paper. Variations of chart speed are possible between 2.5 mm and 1000 mm per second. A speed of 100 mm per second was used for all the traces shown in this Thesis. A 'time marker' of 50 Hertz is shown for the measurement of durational features.

The Palatograms shown in the Thesis are all made by the indirect method; that is, with the use of an artificial palate, specially made for the subject. This was sprayed with purified talc, the palate inserted in the mouth, the utterance made, and when the palate was carefully removed, the resultant 'wipes' were photographed for reproduction purposes. A Palatogram Figure in transparent material is included for identification of the various regions.

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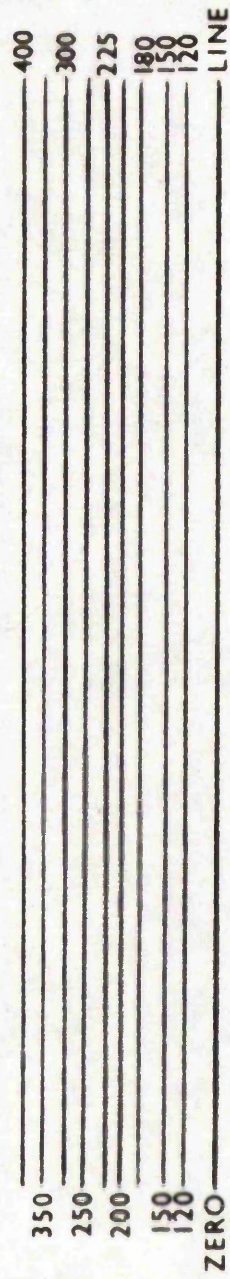
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Tonogram Calibration Grid

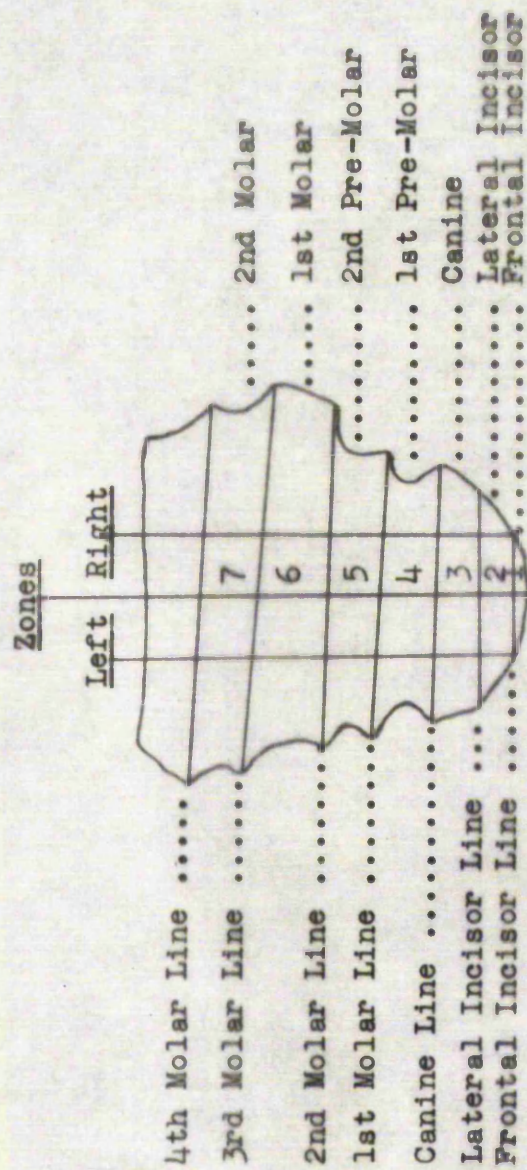
Miss Suwimon Thamtawat



Frequency in Hertz

The Palatogram Figure

Miss S. Thantawat



Tonogram Calibration Grid

Miss S. Thamtawat

(for Chapter 5 only)

| | | |
|------|-------|------|
| 350 | _____ | 400 |
| | _____ | |
| 250 | _____ | 300 |
| | _____ | |
| 200 | _____ | 225 |
| | _____ | |
| 160 | _____ | 180 |
| | _____ | |
| 100 | _____ | 140 |
| | _____ | |
| Zero | _____ | Line |

Frequency in Hertz